

PLACEBO PSYCHOTHERAPY AND CHANGE IN
ANXIETY, MOOD AND ADJUSTMENT

By

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INTRODUCTION

The extensive literature dealing with processes and systems of psychotherapy generally makes the explicit assumption that behavioral changes following psychotherapeutic encounter are a function of the intended efforts of the psychotherapist. That is, behavioral modification results from the direct and specific efforts, manipulations or techniques of the psychotherapist. Within the framework of Roger's theory (1961), for example, the therapist approves and accepts the client and as a result the client comes to accept himself. The patient in psychoanalysis achieves personal satisfaction and comfort as the psychoanalyst interprets the patient's repressed psychosexual conflicts and the patient establishes a mature sexual adjustment (Fenichel, 1945). Shoben (1953) describes the goal of psychotherapy as the alleviation of symptoms in addition to the increase in a patient's affective comfort. Thus, in all psychotherapy, "specific factors" (therapist behaviors) allegedly produce intended effects (personal comfort of the patient).

Eysenck (1952, 1961) states, and Rosenthal and Frank suggest (1956) that in addition to the intended efforts of the psychotherapist (specific factors), there are other, nonspecific factors in psychotherapy which significantly contribute to the outcome of treatment. "Nonspecific factors" are loosely defined as those "placebo effects," situational events and conditions in addition to the intended efforts of the therapist which reportedly function in all treatment situations (Shapiro, 1964). They serve to cloud interpretation of "real" effects of psychological

treatment (Rosenthal and Frank, 1956) for they produce manifest effects which are indistinguishable from the effects produced by the intentional treatment prescribed by the particular theory of psychotherapy.

Strupp (1962) indicates that because these nonspecific factors have been largely neglected in research in psychotherapy, the extent of their influence is undetermined. Many significant theorists and researchers (e.g., Rogers, 1961) expound on the efficacy of their psychotherapeutic systems, although nonspecific factors, which may greatly contribute to the final outcome of psychological treatment are not effectively accounted for, controlled or measured. Understandably, successful outcome of psychotherapy is viewed as proof of the effectiveness of psychotherapy. However, it has not been demonstrated that personality and behavioral modifications which occur as a result of psychotherapy are entirely (or even largely) due to the psychotherapist's specific techniques. Instead, the actual outcome of treatment is a function of both the specific and nonspecific events occurring during psychotherapy.

Eysenck (1961), after reviewing and summarizing the literature, shows that actual psychotherapy does not achieve higher recovery rates than those reported from ordinary life experiences and the nonspecific effects of routine medical treatment. After demonstrating that nonspecific treatment produces effects comparable with actual psychotherapy, Eysenck implies that nonspecific factors in psychotherapy are essential factors responsible for bringing about successful psychotherapeutic change. Findings and statements such as these clarify the necessity for research in this area.

Effects of treatment with drug placebos are those nonspecific effects given the greatest attention in the literature. Based on his review of the literature, Shapiro (1964) states that placebo effects are subtle and common to all treatment situations and are the most important nonspecific factors in psychological treatment. He defines the placebo effect as the "psychologic, physiologic, or psychophysiologic effect of any medication or procedure given with therapeutic intent which is independent of or minimally related to the effects of the medication or to the specific effects of the procedure and which operates through a psychologic mechanism" (p. 298). In addition, the administration of this medication or procedure must be recognized as legitimately therapeutic by the patient.

Rosenthal and Frank (1956) also refer to the placebo effect as a type of nonspecific event in psychological treatment and they report that since research in psychotherapy has not dealt directly with the placebo effect, the nature of its influence is undetermined. However, these authors speculate that it occurs with considerable regularity, and they stress the need to demonstrate through research that observed effects of psychotherapy are due to the therapist's techniques and exist separate from nonspecific effects.

Borgetta (1959) expands on the importance of the placebo effect by reporting that "if there is no evidence that an agent is the cause of a given outcome, and there is also no evidence that a placebo is the cause of a given outcome, an appropriate statement is that there is no evidence that the agent is more efficient than the placebo in bringing

about the outcome. Further, there is also no evidence that the placebo is not as effective as the agent in bringing about the outcome" (p. 331).

The literature is replete with references confirming the efficacy of nonspecific effects of drug placebos (see reviews by Shapiro, 1964 and Hongingfield, 1963). However, despite the demonstrated effectiveness of drug placebos, and the alleged importance of the placebo effect in psychological treatment, adequately controlled studies evaluating the placebo effect in psychotherapy are conspicuously lacking (Rosenthal and Frank, 1956 and Strupp, 1962). One is currently forced, therefore, to rely on implication, inference, and analogy when constructing evidence of, and predictive hypotheses pertaining to, the influence of nonspecific placebo factors in psychotherapy.

The Present Study

"As Withering's foxglove was made more potent when digitalis was isolated from the concoction, and after it was recognized that only the dropsy of congestive heart failure was benefited, so will psychotherapy become more potent after the placebo effect is isolated and dissected free from the psychotherapeutic process" (Shapiro, 1964, p. 85).

As long as both specific and nonspecific (placebo) factors operate together during the treatment, one may never accurately determine the real contribution of the placebo effect to psychotherapy. Since nonspecific placebo factors reportedly function unbeknown to the psychotherapist, since their presence is reportedly a factor in the outcome of all psychotherapy, and since they remain a nebulous and poorly defined factor in psychotherapy, it is clear that the extraction of these placebo effects

from an investigation of actual psychotherapy is a complex, if not impossible task. Thus, a demonstration of the genuine effects of psychotherapy free of placebo effects seems never to have been made.

In this study an attempt is made to investigate a form of "psychotherapeutic encounter" in which specific factors could not contribute to the outcome of treatment. That is, any changes which accrue as a result of the treatment are not due to a psychotherapist's behavior, technique or manipulations during treatment. Change, instead, must be attributed to the presence of the placebo factor and must be referred to as a placebo effect.

A "psychotherapeutic encounter" can take place when a patient reports to a tape recorder for one "therapy session" believing a psychotherapist will listen and respond to his talking. Measures of change in such "affective comfort" (Shoben, 1953) as moods and anxiety taken immediately after this treatment will indicate the effect of the treatment. Borgatta (1959) suggests, satirically, that this technique be used to demonstrate the relative ineffectiveness of actual psychotherapy. Slack (1960), on the other hand, demonstrated that therapeutically inaccessible juvenile delinquents could be introduced to psychotherapy by initially having them speak into a tape recorder. Eventually these juveniles were introduced to the therapist who had been giving them feedback from the tapes, and actual psychotherapy was initiated. Martin, Lundy and Lewin (1960) evaluated the reinforcing effects of three degrees of therapist communication on the affectively toned verbalizations of their subjects. The group intended to have virtually no communication from the therapist spoke into a tape recorder as if they were speaking to a psychotherapist.

In the present study, one half of the subjects will speak into the tape recorder while the other half will wait an identical length of time. Since both groups will be given the instructions that they are about to speak to a psychotherapist through the tape recorder this will permit a comparison between a group given both the promise and the gesture of help and a group given only the promise of help. Changes in mood and anxiety in the group which does speak may be viewed as a demonstration of the nonspecific placebo effect in a single session of psychological treatment. The effects of this treatment should be utilized as a base line against which further research may be compared to demonstrate that an actual psychotherapeutic interview produces changes different from, or greater than the "placebo psychotherapy."

Shapiro (1964) reports that important features of a therapeutic relationship which are responsible for the placebo effect are basically elements of (1) the patient, (2) the doctor, and (3) the treatment situation; in addition to a fourth factor: the doctor-patient relationship. That is, there are certain characteristics of each of these components of treatment which contribute to a nonspecific placebo effect.

(1) The patient.

Shapiro, in his review of drug research (1964), points out that many individual differences of patients have been evaluated to assess possible relationships with the placebo effect. Such characteristics as sex, age, intelligence and diagnosis have been observed repeatedly in order to ascertain if a certain type of person responds more readily to placebo factors. However, as Shapiro reports, this body of research is equivocal and often contradictory. For example, Lasagna et al. (1954)

administered a placebo to a group of postoperative patients to relieve reported pain. Those patients reporting a decrease in pain after receiving the placebo had a mean age five years greater than the age of the nonreactors ($p < .05$). On the other hand, Tibbetts and Hawkins (1956) found that patients who responded in two drug placebo situations were younger than the nonresponders. In studies by Kornetsky et al. (1957) and Abramson et al. (1955) no meaningful relationship existed between age and drug placebo responsiveness. Similarly, level of intelligence as a patient variable has produced contradictory results. In the Lasagna study reported above, intelligence did not significantly distinguish the placebo reactor from the nonreactor. On the other hand, Tibbetts and Hawkins (1956) found the placebo reactor to be less intelligent than the nonreactor, while Abramson et al. (1955) found the placebo reactor to have a higher verbal intellectual ability and a lower performance intellectual ability.

Leiberman (1964) reports that Eysenck has correlated neuroticism with the need for conformity in an individual's perceptions and judgments. Therefore, he contends that "In group situations, where an element of interpersonal pressure activates the need for conformity, the subjects with neurotic tendencies respond with placebo effects." In fact, Eysenck argues that a subject's degree of neuroticism is a consistent factor for picking out high placebo reactors. Eysenck (1961) further speculates that since introverts form conditioned responses more quickly than extroverts, and since he reports that response to a placebo is a learned or conditioned response, he expects introverts to respond more readily to placebo factors (p. 636).

However, despite the logical consistency of Eysenck's speculations, the literature concerning the placebo responsiveness of neurotics and introverts is equivocal. For example, Fischer and Dlin (1956), using psychiatric patients, demonstrated that neurotics were the most responsive subjects in a drug placebo situation. On the other hand, Kurland (1958) disputes this conclusion on the basis of his finding that no difference exists between the placebo reactivity of psychotics and nonpsychotics. Joyce (1959) in a drug study with medical students, indicates that extroverts are the most responsive subjects, while Lavery (1958) demonstrates that introverted subjects are the most responsive in drug treatment situations.

In this study, age, intelligence, introversion and neuroticism are the patient characteristics whose contribution to the placebo effect will be evaluated.

(2) The doctor.

The nature of the treater is reportedly an important factor for encouraging or discouraging placebo effects (Shapiro, 1964; Uhlenruth et al., 1959). For example, Gildeman et al. (1957) demonstrated that a male physician gained a 70 per cent cure rate in a treatment for which a female nurse could achieve only a 25 per cent cure rate. He also has shown that if the administering physician is perceived as an expert healer, the response of the patient to treatment will be greater than if the physician is believed to be a medical quack. These effects were obtained, conceivably, because the patient maintains certain cognitive expectancies about the nature of treaters, and when these expectancies are

dissonant with the treatment situation, the effectiveness of treatment decreases (see Festinger and Bramel in Bachrach, 1962).

Similarly, folk medicine in the Spanish Southwestern United States (Jaco, 1958) and witchcraft healing in many parts of the world (Frank, 1961) flourish and prevent the establishment of modern medical programs, at least in part, because scientifically trained physicians do not meet local expectancies about the nature of treaters. That is, to these people scientific physicians are cognitively dissonant in the role of "doctor." Conversely, the effectiveness of the native witch doctor is enhanced because he meets his clientele's expectancies concerning the nature of treaters.

In the present research, verbal instructions to the patients will establish two different types of doctors (psychotherapists). One is the type of psychotherapist the patient expects and the other does not conform to his expectations (see Appendix A). This will produce two distinct groups of subjects regarding their personal perception of their psychotherapists.

(3) The treatment situation.

Foulds (1958) and Shapiro (1964) refer to many studies which demonstrate that a treater's bias can significantly influence treatment outcome. For example, Hofling (1955) and Frank (1958), in studies, demonstrate that positive staff attitudes and biases toward a particular placebo or specific treatment increases the effectiveness of that treatment. Lysterly et al. (1962) in a drug study, have shown that subjects receiving instructions appropriate to the expected effects of chloral hydrate, regardless of the actual drug or placebo administered, reported subjective

changes appropriate to the chloral hydrate. Abramson et al. (1955) administered tap water to a group of subjects who believed the liquid to be LSD-25. A percentage of these subjects responded to the tap water with psychomimetic behavior as if the water actually were LSD-25.

Frank (1961) suggests that a patient's "faith" in a set of treatment operations is often all that is necessary to produce positive change, and this is so even when these treatment operations are scientifically absurd. Wolf (1959) states that a placebo is effective when a patient has a "conviction" that a certain effect will follow.

In the present study, an attempt will be made to manipulate expectations concerning the value of the "placebo psychotherapy" and the amount of profit to be anticipated from the treatment. One group will receive a positive set concerning that which can be gained from the treatment and the other will receive a more neutral set (see Appendix A).

To summarize, the hypotheses under investigation in this study are:

- I. Those subjects who receive the placebo psychotherapy (speak into the tape recorder) will show more marked change in a "therapeutic direction" on measures of anxiety and mood than those subjects who simply wait a comparable length of time. However, neither group will show a change in general level of psychological adjustment in this single treatment.
- II. The subjects who believe that their therapist is an individual congruent with their expectations will show more marked change in a "therapeutic direction" on post measures of anxiety and mood than those subjects whose expectations are dissonant with the therapist's description. Neither group will show a change in general level of psychological adjustment after this single treatment.

- III. Those subjects receiving a positive set regarding the value and outcome of the treatment will show more marked change in a "therapeutic direction" on post measures of anxiety and mood than those subjects who receive a more neutral set. However, neither group will show a change in general level of psychological adjustment in this single treatment.
- IV. The measured individual subject differences of age, intelligence, level of Introversion and of neuroticism will not identify the subjects who respond best to this placebo situation. That is, there will be no differences between the placebo responsiveness of subjects in terms of their age, intelligence, level of Introversion-extroversion and level of neuroticism.

May the "placebo psychotherapy," as introduced above, be legitimately referred to as a placebo treatment situation? There is a strong analogy between this treatment and that which exists when a physician administers a drug placebo. The physician who treats a patient with a placebo pill does so in the same treatment setting, giving the same directions, and offering the same encouragement as if the pill were pharmacologically sound. The only changed characteristic, and that which defines the situation as exclusively nonspecific, is the absence of the actual drug--that agent in the treatment situation which produces the specific effect. Reactions to this placebo are recorded as "placebo effects" although they may appear to be a result of a specific drug which is clearly absent from the treatment. Similarly, in a sham interview such as that mentioned above, the patient is given the same directions, the same encouragement and is placed in the same treatment setting as if it were an actual psychotherapeutic situation. The only changed characteristic, and that characteristic which defines the situation as nonspecific in this case, is the absence of the psychotherapist, that is, the only agent

through which specific effects may result. Reactions to this placebo situation can be viewed as "placebo effects." Without knowledge of the nature of the treatment, the effects may appear to result from the specific behavior or techniques of a psychotherapist. However, his absence from the treatment necessarily means that all effects are nonspecific, or placebo.

Since there is no psychotherapist present, can this situation be thought analogous to a therapeutic interview? The patient is talking to a therapist who exists only in the patient's fantasy and is instituted by the experimenter. Apfelbaum (1958) points out that individuals tend to create, in part, interpersonal experience and that ongoing interpersonal process in therapy is primarily a function of a patient's personal transferences. A patient, in utilizing past experience and partial cues, projects the image of his psychotherapist, and thereby unknowingly perceives him in part through his projective capacity. Consequently, the therapist is perceived largely as a function of the patient himself. The attitudes a patient holds toward his alleged therapist in the "sham" or "placebo" interview suggested above may be controlled and manipulated by experimental design. The therapist exists entirely in fantasy and as a function of the patient's projective capacity and description of him as reported by the experimenter. The patient, however, in effect, establishes an intrapersonal relationship which he believes to be, and which appears to have the qualities of, an interpersonal psychotherapeutic relationship.

Thus, the sham interview will be regarded as both a placebo treatment and a therapeutic interview.

METHOD

The study involved 96 subjects who were placed into eight treatment conditions as diagrammed below in Table 1.

TABLE 1
THE EXPERIMENTAL DESIGN

	Experimental Group		Control Group	
	Congruent Therapist Instructions	Incongruent Therapist Instructions	Congruent Therapist Instructions	Incongruent Therapist Instructions
Positive set concerning treatment outcome	n = 12	n = 12	n = 12	n = 12
Neutral set concerning treatment outcome	n = 12	n = 12	n = 12	n = 12
		n = 48		n = 48

The technique and procedure of establishing these treatment conditions, and the way in which the data were collected are fully explained in the Procedure section. The tests which were administered to the subjects and the use to which the test information was put in the design are described in the Means of Measurement section.

Subjects

The subjects for the study were 96 neuropsychiatric hospital patients in the Gulfport, Mississippi, Veterans Administration Hospital. They are all in-patient residents of the Rehabilitation and Placement Service Ward which houses only those patients judged capable of returning to the community. The ward offers a vocational testing service and is professionally staffed by a psychiatrist, two counseling psychologists and a number of nursing personnel.

The 96 subjects were drawn from the ward during 48 separate sessions extending from August 29, 1964, to October 19, 1964. The sample consists of white adult males. There is a wide range of prehospitalization vocations. None were in psychotherapy when seen as subjects for the study. However, it was known that some of these patients had been in group or individual psychotherapy earlier in their hospitalization. The identification of former psychotherapy patients was not made, but there is no reason to suspect a nonrandom assignment of these patients to the different experimental treatment conditions. Similarly, although it was known that some of the sample were receiving drugs for their psychiatric conditions, these subjects were not identified and their random assignment to the different experimental treatment conditions was expected.

The mean age of the sample was 38.76; range 18 to 58; standard deviation 7.41. Below is a summary table of an analysis of variance (Lindquist, 1953) demonstrating that subject ages are randomly distributed across all treatment conditions.

The mean I.Q. of the sample, as measured by the Beta Intelligence Test (Kellogg et al., 1946) was 98.54, which is within the normal range.

TABLE 2
SUMMARY TABLE OF AN ANALYSIS OF VARIANCE DEMONSTRATING THE
RANDOM DISTRIBUTION OF AGE

Source	ss	df	V	F
A (experimental vs. control)	25.01	1	25.01	.44
B (congruent vs. incongruent)	3.76	1	3.76	.07
C (positive vs. neutral)	147.51	1	147.51	2.58
AB	25.01	1	25.01	.44
AC	11.35	1	11.35	.20
BC	25.01	1	25.01	.44
ABC	3.76	1	3.76	.07
w Cells	<u>5,030.08</u>	<u>88</u>	57.16	
Total	5,271.49	95		

(An F of 3.95 is significant at the .05 level.)

The range of I.Q.'s was from 73 to 129; standard deviation 12.14. Below is a summary table of an analysis of variance demonstrating that I.Q. is randomly distributed across all treatment conditions.

The mean educational level of the sample is 10.9 years, and ranged from 6 years to 20 years. The mean of the length of current hospitalization to the closest month is 27 months and ranged from three days to 14 years. The psychiatric diagnoses carried by these patients were made by a psychiatrist at the time of admission to the hospital. There is a wide range of psychiatric diagnoses, which, for the purposes of this study are divided into 56 psychotic and 40 nonpsychotic. Because all subjects were randomly assigned to the treatment conditions, there is

TABLE 3
SUMMARY TABLE OF AN ANALYSIS OF VARIANCE DEMONSTRATING THE
RANDOM DISTRIBUTION OF I.Q.

Source	ss	df	V	F
A (experimental vs. control)	96.00	1	96.00	.62
B (congruent vs. incongruent)	.37	1	.37	.00
C (positive vs. neutral)	2.04	1	2.04	.01
AB	165.38	1	165.38	1.07
AC	3.37	1	3.37	.02
BC	66.67	1	66.67	.43
ABC	140.17	1	140.17	.90
w Cells	<u>13,657.83</u>	<u>88</u>	155.20	
Total	14,131.83	95		

(An F of 3.95 is significant at the .05 level.)

reason to expect that educational level, length of hospitalization and diagnosis are randomly distributed across treatment conditions. The psychotic patients all have shown good remission of their symptoms and all patients serving as subjects in the study were judged by a psychiatrist to be sufficiently psychologically sound to return to the community and be employed.

Means of Measurement

Two tests upon which change in feelings of personal comfort can be monitored (the Anxiety Adjective Check List and the Mood Adjective Check List), and one test evaluating general level of psychological

adjustment (The Adjustment Score) were administered twice to each subject --once prior to and once immediately after the treatment. Changes in scores on these tests were used to evaluate changes as described in the four hypotheses.

(1) The Anxiety Adjective Check List (AACL) (see Appendix B).

The Anxiety Adjective Check List (AACL) (1960) has been shown by Zuckerman to be a "quick measure of anxiety level." It was chosen for this study because of its demonstrated validity and reliability and the fact that the instructions may be modified to permit sensitive evaluation of changes in the level of manifest anxiety over short periods of time.

The check list is an empirically developed pool of 61 adjectives with varying affective connotations. Twenty-one adjectives were identified, on the basis of an item analysis, as discriminating between psychiatric patients rated high on anxiety and normal control subjects. Of these items, eleven are anxiety negative adjectives and ten are anxiety positive. Subjects may obtain a score from 0 to 21 on the check list. Zuckerman has developed two forms. One instructs subjects to denote how they feel "in general" and the other asks how they feel "today." Although standardized on college students, Zuckerman reports no differences in performance due to age, sex or level of education.

In two studies (1960, 1962) Zuckerman reports internal and test-retest reliabilities for the "in general" form to be significant at greater than the .001 level. However, the "today" form, although similarly internally reliable, had low test-retest reliability ($r = .68$, $p < .001$). These results were anticipated and suggest that the today form is sensitive to short-term fluctuations in anxiety. Validity was

evaluated by administrations of the today form to a class in general psychology. The check list was given on 10 nonexamination days and three examination days. The examination-day administrations resulted in a significantly higher reported level of anxiety than the nonexamination-day administrations ($p < .0005$). The today form, with instructions modified to read "right now," will be used in this study.

(2) The Mood Adjective Check List (MACL) (see Appendix C).

Nowlis (1956, 1960, 1961) assumed mood to be a multidimensional characterization of a person's feeling or behavior which is accessible to self report. The MACL resulted from a series of seven factor analytic studies by him (1960). In those seven studies Nowlis demonstrated that 40 adjectives, from his original pool of 200, have relatively consistent and high loadings on twelve separate factors. These 40 adjectives constitute the MACL which is scored separately for each of the twelve factors (which are the identified moods). Further, the twelve factors (moods) are divided into three groups: those "factors most consistently identified," those "factors identified fairly consistently" and "factors tentatively identified." Below are the twelve mood factors and the particular adjectives constituting the factors.

Certain specific moods on the MACL have particular relevance for the purpose of this study because they would be expected to change in a certain direction as a result of successful psychotherapy. Aggression and Deactivation would be expected to decrease, while Social Affection would be expected to increase. Similarly, after successful psychotherapy the moods of Anxiety and Depression would be expected to decrease and Pleasantness and Activation would be expected to increase. At a lower

TABLE 4

THE TWELVE MOOD FACTORS OF THE MACL AND THE ADJECTIVES
CONSTITUTING EACH MOOD FACTOR

Adjectives with high loadings on the factor	
Factors Most Consistently Identified:	
AGGRESSION	angry, bold, defiant, rebellious.
CONCENTRATION	concentrating, earnest, engaged in thought, serious.
DEACTIVATION	drowsy, earnest, tired.
SOCIAL AFFECTION	affectionate, forgiving, kindly, warmhearted.
Factors Identified Fairly Consistently:	
ANXIETY	apprehensive, clutched up, fearful, insecure.
DEPRESSION	blue, lonely, regretful.
EGOTISM	boastful, cocky, egotistic, self-centered.
PLEASANTNESS	elated, lighthearted, overjoyed, pleased.
Factors Tentatively Identified:	
ACTIVATION	active, energetic, vigorous.
NONCHALANCE	nonchalant, playful, witty.
SKEPTICISM	skeptical, suspicious.
STARTLE	startled, shocked.

level of certainty, because of difficulty in interpreting its meaningfulness in a psychotherapeutic context, Concentration and Nonchalance might be expected to increase, while Egotism, Skepticism and Startle might be expected to decrease after treatment. In addition, changes in Skepticism after the treatment may reflect the extent to which this treatment was believed to be real.

In his research developing the MACL, Nowlis used male and female college students and U. S. Navy personnel in a variety of experimental (drugs, films) and field situations. For example, one validation procedure that Nowlis reports (1961) involved the administration of a drug which

has known effects on a person's feelings and moods. Continuous monitoring of mood on the MACL for 16 hours demonstrated that fluctuations in the MACL were related to anticipated drug-induced changes. Without reporting actual correlational figures, Nowlis indicates that concurrent validity of the MACL is high, although the test-retest reliability is low. Nowlis describes temporality as one of the characteristics of a mood and therefore, because of the low reliability of the check list, he suggests that the scale is sensitive to short-term fluctuations in mood. Because of its short length and ease of administration, Nowlis points out, it is possible to monitor mood with this instrument "over repeated intervals of any required length."

The subject is asked to circle one of four options for each word in the check list: a double plus if the adjective definitely describes a current strong feeling, a single plus if the word slightly applies to a current feeling, a question mark if the word is unclear or the subject is unable to decide if the adjective describes a current feeling and no if the subject is certain that the word does not describe a present feeling. Double plus is scored as 3, single plus is scored as 2, question mark is scored as 1, and no is scored as 0. Twelve mood scores are obtained by summing the scores of the individual adjectives in each of the moods.

The scores may range from 0 to 12 on the moods of Aggression, Concentration, Social Affection, Anxiety, Egotism and Pleasantness. The scores may range from 0 to 9 on the moods of Deactivation, Depression, Activation and Nonchalance. On the moods of Skepticism and Startle the scores may range from 0 to 6.

(Both the AACL and the Anxiety Mood on the MACL reportedly measure level of manifest anxiety. The MACL Anxiety mood contains four affectively toned adjectives, each of which the subject responds to by denoting the extent to which the adjective describes his current feelings. The AACL, on the other hand, asks a subject to check those adjectives that apply to his current feelings. Only one of the four adjectives on the MACL Anxiety mood is identical with the 21 adjectives which are scored on the AACL. A comparison between pretreatment performance on the two Anxiety measures resulted in a Pearson product-moment correlation of $+0.64$, and a Pearson product-moment correlation between the subject's changes in the two scales from pre- to posttreatment testing resulted in a correlation of $+0.57$. Both these correlations are significant beyond the $.001$ level. This suggests that despite the basic uniqueness of the two measures, they are measuring essentially the same factor of 'anxiety.')

(3) The Adjustment Score (see Appendix D).

The Adjustment Score was chosen to evaluate changes in general level of psychological adjustment. It was originally constructed by Dymond (1953) as a Q-sort to evaluate the effects of nondirective counseling. The statements were compiled empirically by Butler and Haigh who noted that they were representative of the positive and negative comments made by people in psychotherapy.

Four 'well-trained, practicing clinical psychologists' who were not client-centered by theoretical orientation 'agreed remarkably well' in choosing 37 negative indicators of adjustment and 37 statements describing positive adjustment (1953). These 74 statements rated on a 'like me' to 'unlike me' dimension constitute the scale.

Dymond (1954) demonstrated that a significant difference existed between the mean adjustment scores on the Q-sort of subjects in two months of client-centered psychotherapy as compared to control subjects who waited a comparable length of time ($p < .01$). Dymond reports that the test-retest reliability of this control group is +.86. Validity was established in two ways: (1) rank order correlations between self-ideal correlations and the Q-sort adjustment score of clients before therapy began was +.83, and the rank order of these same subjects after therapy was +.92; (2) each therapist rated the success of his therapy for each client and these ratings correlated at better than the 5 per cent level with the subject's own scores on the Q-sort.

For the purpose of the present study, the 74 items on the Q-sort were randomly organized into a questionnaire. The subject is asked to mark an item "true" if it pertains to him and mark "false" if the item does not pertain to him. A total of the positive items marked true and negative items marked false constitute a subject's adjustment score.

The AACL, MACL and the Adjustment Score were administered twice to all subjects, once prior to and once immediately after the treatment. The change in scores from pre- to posttreatment testing constitute measured changes in manifest anxiety, 12 independent moods and general level of psychological adjustment.

(4) The Maudsley Personality Inventory (MPI).

In order to evaluate part of Hypothesis IV, the MPI (Eysenck, 1959, 1961) was administered to obtain subject differences in level of neuroticism and degree of introversion. "Extroversion, as opposed to introversion, refers to the out-going, uninhibited, social proclivities of

a person," and neuroticism represents "the general emotional lability of a person, his emotional overresponsiveness, and his liability to neurotic breakdown under stress" (1959, p. 3). The Inventory has 48 questions which have been factor analyzed to yield scores on an extroversion-introversion dimension and a neuroticism dimension. Although the two dimensions are slightly negatively correlated ($-.15$), Eysenck submits that they are essentially orthogonal.

The original standardization took place on a sample of 200 normal English men and 200 normal English women. Eysenck has since supplemented this by adding groups of students, nurses, industrial apprentices and "a quota sample of the whole population." Data are also available on groups of hospital patients and prisoners. Split-half and Kuder-Richardson reliability coefficients for the Neuroticism scale fall between .85 and .90 and for the extroversion scale fall between .75 and .85. Using both concurrent and construct validation techniques, Eysenck reports that the MPI has yielded data supporting its validity.

(5) A Modification of the Expectation Q-sort (Apfelbaum, 1958)
(see Appendix E).

The Q-sort asks a subject to indicate his expectancies regarding the nature of a psychotherapist who may be assigned in the future. Thirty-six of the 60 items in Apfelbaum's item pool were chosen and randomly organized into a questionnaire. These 36 items constitute those with heaviest factor loadings on three separate clusters: (1) those items which designate a guiding, giving, protective therapist; (2) those items which designate a tolerant, accepting and permissive therapist; and (3) those items which designate a cold, rigid and condemnatory therapist.

In addition to the five tests, each subject was also asked to complete a questionnaire asking for personal information (see Appendix F). Each subject also had taken the Beta Intelligence Test (Kellogg et al., 1946).

Procedure

Subjects were chosen from the ward by a secretary who was naive concerning the mechanics and goals of the study. She was informally questioned after the completion of the study and no bias in the subjects she chose, and her order of choosing them, was noted.

The subjects were seen two at a time. Once the subjects were seated in the testing room they were given instructions which drew their interest to the tasks about to be presented but did not disclose the nature of the research nor the fact that it was research (see Appendix A). They were given the following tasks in the order noted:

1. Personal information sheet
2. Maudsley Personality Inventory
3. Anxiety Adjective Check List
4. Mood Adjective Check List
5. Expectation questionnaire
6. The Adjustment Score

These tasks were relatively short, took no longer than 40 minutes to complete and subjects did not appear to become fatigued. After completing the six questionnaires the pair of subjects was told that this was an opportunity to speak with a psychiatrist, that he was unable to get to the hospital and that he requested they speak into a tape recorder, the tape of which would be sent to him by registered mail (see Appendix A for exact wording).

By a coin toss prior to the meeting between subjects and Experimenter, one subject of the pair was to be placed in the Experimental Group and the other of the pair was to be placed in the Control Group (treatment vs. wait). Two additional coin tosses by the Experimenter prior to the meeting determined whether this particular pair of subjects would receive (1) the positive or neutral set, and (2) the congruent or incongruent therapist instructions. Both subjects were then given the instructions appropriate to their designated treatment category (i.e., (1) positive set, congruent therapist; (2) positive set, incongruent therapist; (3) neutral set, congruent therapist; and (4) neutral set, incongruent therapist [see Appendix A]). The Experimenter had sufficient time while the subjects were filling in the Adjustment Score, to choose the predetermined items on the Expectation Questionnaire and manipulate the congruence and incongruence of the subject's alleged psychotherapist (see Appendix A).

The Control Group subject of the pair was then asked to remain in the testing room. He was asked to relax, was offered the use of a stack of magazines and was told that the Experimenter would return in about 50 minutes (see Appendix A for exact wording). The Experimental Group subject was then taken to the room which contained the tape recorder. This room had a one-way vision screen and was wired for sound. The subject was seated in an easy chair, instructed to speak to the 'psychiatrist' and was told that the Experimenter would return in about 50 minutes to retrieve the tape and the tape recorder was turned on (see Appendix A for exact wording). The Experimenter then seated himself in an observation room where he was able to record the Experimental Group subject's

verbalizations and to observe that the Control Group subject remained in his room. Record was made of the amount of the subject's speech, and in several cases the content of the subject's verbalizations. With a stop watch, amount of speech was rated as follows: constant speaker, no longer than 3-minute pauses; moderate speaker, no longer than 5-minute pauses; little speaker, at least some verbalization; no speaker, says nothing.

At the end of 45 minutes the Experimenter turned off the tape recorder and guided the Experimental Group subject back into the testing room. Both subjects were then asked to "retake several of the shorter tests." The following were readministered:

7. Anxiety Adjective Check List
8. Mood Adjective Check List
9. The Adjustment Score

At this point, the collection of the data was completed. The Experimental Group subject was dismissed. If the subject asked about feedback, he was told that he would receive some type of feedback within several weeks. He was also encouraged not to tell anyone the nature of what had happened because the Experimenter would be unable to see everyone for this project. The Control Group subject was then asked if he wished to "speak to the psychiatrist." If he agreed, he was given 45 minutes with the tape recorder; however, if he declined, he was dismissed. Twenty-one of the 48 Control Group subjects chose to speak.

If any subject discussed suicidal or homicidal content, mentioned intensely pressing issues or made special requests, the Experimenter promptly called this information to the attention of the ward psychiatrist. This occurred in twelve cases.

After all the data were collected, all subjects who spoke into the tape recorder were sent a letter (see Appendix G). The purpose of this letter was to thank the subject for his cooperation and inform him of the way in which he could contact the Experimenter for further clarification of the procedure. Twelve of the 69 subjects who spoke into the tape recorder contacted the Experimenter as a result of this letter.

RESULTS

Analysis of covariance (Ray, 1960) was used to evaluate the tenability of hypotheses I, II and III (those hypotheses concerned with the effects of differential experimental treatment). In analyzing the three hypotheses, the eight independent treatment conditions, as diagramed in Table I were considered. Dependent variables in hypotheses I, II and III were the changes in scores from pre- to posttreatment testing on the AACL, the 12 moods in the MACL and Dymond's Adjustment Score. Thus, evaluation of the first three hypotheses was made across the three independent variables utilizing 14 $2 \times 2 \times 2$ analyses of covariance--one for each dependent variable.

The technique of analysis of covariance chosen to evaluate hypotheses I, II, and III utilizes the fact that differences between the treatment groups on a dependent variable posttreatment measure may be to some extent a reflection of differences between these groups on the initial pretreatment measure. It removes the variance due to these initial random differences from the final posttreatment variances, thus reducing the size of the error variance and increasing the precision of the experiment (Gourlay, 1953). That is, by utilizing the regression of the posttreatment measures on the pretreatment measures, an adjustment is made for the variability which is associated with initial differences among the subjects. After this adjustment is made, the remaining variability may be analyzed with a more precise estimate of factors which may have produced an effect.

By inspection, the data appear to have significant homogeneity of variance. Norton (as cited by Lindquist, 1953) demonstrates that unless the heterogeneity of variance is so extreme that it is readily apparent upon inspection, the effect upon the F distribution will be negligible. No formal tests of homogeneity of variance were conducted. Statistical significance was set at the .05 level prior to the analysis. Below are the summary tables of the analyses of covariance for each of the dependent variables (Tables 5 through 18). In addition, the mean change scores from pre- to posttesting in each treatment condition are presented for each of the dependent variables (Tables 5A through 18A).

Hypothesis 1 states that the Experimental Group (placebo treatment group) will show more "positive therapeutic changes" in the AACL and the moods of the MACL than the Control Group (wait group). This prediction was supported in the analyses of the main effects of three of the fourteen dependent variables. On the AACL, the Experimental Group showed a greater decrease in reported anxiety after treatment than did the Control Group ($p < .05$) (see Table 5). On the MACL Social Affection mood, the difference was significant between the increase in Social Affection for the Experimental Group after treatment and the decrease after treatment in Social Affection for the Control Group ($p < .05$) (see Table 9). Similarly, the Anxiety mood on the MACL decreased after treatment for the Experimental Group and increased for the Control Group ($p < .05$) (see Table 10).

Two dependent variables indicated that an interaction exists between the experimental vs. control treatment (Hypothesis 1) and the congruent vs. incongruent therapist treatment (see below, Hypotheses 11).

TABLE 5

SUMMARY TABLE OF THE ANALYSIS OF COVARIANCE FOR THE ZUCKERMAN
ADJECTIVE CHECK LIST

Source	ss	df	V	F
A (experimental vs. control)	44.42	1	44.42	6.29*
B (congruent vs incongruent)	98.55	1	98.55	13.96***
C (positive vs. neutral)	.00	1	.00	.00
AB	69.98	1	69.98	9.91**
AC	6.63	1	6.63	.94
BC	17.67	1	17.67	2.50
ABC	17.67	1	17.67	2.50
error	<u>615.07</u>	<u>87</u>	7.06	
Total	869.96	94		

*** = significant < .001.

** = significant < .01.

* = significant < .05.

TABLE 5A

PRETREATMENT MEANS (\bar{x}_1), POSTTREATMENT MEANS (\bar{x}_2) AND MEAN
CHANGE SCORES (D) FOR EACH TREATMENT CONDITION OF THE
DESIGN ON THE ZUCKERMAN ADJECTIVE CHECK LIST

	Experimental Group		Control Group	
	Congruent Therapist	Incongruent Therapist	Congruent Therapist	Incongruent Therapist
Positive Set	$\bar{x}_1 = 11.08$ $\bar{x}_2 = \underline{7.00}$ $D = -4.08$	$\bar{x}_1 = 8.92$ $\bar{x}_2 = \underline{10.59}$ $D = +1.67$	$\bar{x}_1 = 10.33$ $\bar{x}_2 = \underline{9.75}$ $D = -.58$	$\bar{x}_1 = 8.41$ $\bar{x}_2 = \underline{8.41}$ $D = .00$
Neutral Set	$\bar{x}_1 = 10.08$ $\bar{x}_2 = \underline{7.33}$ $D = -2.75$	$\bar{x}_1 = 9.75$ $\bar{x}_2 = \underline{9.08}$ $D = -.67$	$\bar{x}_1 = 11.33$ $\bar{x}_2 = \underline{11.16}$ $D = -.17$	$\bar{x}_1 = 9.41$ $\bar{x}_2 = \underline{9.83}$ $D = +.42$

TABLE 6
SUMMARY TABLE OF THE ANALYSIS OF COVARIANCE FOR THE
MACL AGGRESSION MOOD

Source	ss	df	V	F
A (experimental vs. control)	8.40	1	8.40	2.00
B (congruent vs. incongruent)	7.57	1	7.57	1.81
C (positive vs. neutral)	.10	1	.10	.02
AB	31.84	1	31.84	7.60**
AC	1.96	1	1.96	.47
BC	4.66	1	4.66	1.11
ABC	5.43	1	5.43	1.30
error	<u>364.29</u>	<u>87</u>	4.19	
Total	424.25	94		

** = significant $< .01$.

TABLE 6A
PRETREATMENT MEANS (\bar{X}_1), POSTTREATMENT MEANS (\bar{X}_2) AND MEAN
CHANGE SCORES (D) FOR EACH TREATMENT CONDITION OF THE
DESIGN ON THE MACL AGGRESSION MOOD

	Experimental Group		Control Group	
	Congruent Therapist	Incongruent Therapist	Congruent Therapist	Incongruent Therapist
Positive Set	$\bar{X}_1 = 3.33$ $\bar{X}_2 = \underline{1.83}$ $D = -1.50$	$\bar{X}_1 = 3.42$ $\bar{X}_2 = \underline{3.67}$ $D = +.25$	$\bar{X}_1 = 3.50$ $\bar{X}_2 = \underline{4.50}$ $D = +1.00$	$\bar{X}_1 = 2.33$ $\bar{X}_2 = \underline{2.00}$ $D = -.33$
Neutral Set	$\bar{X}_1 = 2.17$ $\bar{X}_2 = \underline{1.25}$ $D = -.92$	$\bar{X}_1 = 2.42$ $\bar{X}_2 = \underline{3.17}$ $D = +.75$	$\bar{X}_1 = 2.67$ $\bar{X}_2 = \underline{2.67}$ $D = .00$	$\bar{X}_1 = 2.08$ $\bar{X}_2 = \underline{2.50}$ $D = +.42$

TABLE 7
SUMMARY TABLE OF THE ANALYSIS OF COVARIANCE FOR THE
MACL CONCENTRATION MOOD

Source	ss	df	V	F
A (experimental vs. control)	1.81	1	1.81	.49
B (congruent vs. incongruent)	6.59	1	6.59	1.78
C (positive vs neutral)	1.12	1	1.12	.30
AB	4.75	1	4.75	1.28
AC	6.14	1	6.14	1.65
BC	3.87	1	3.87	1.04
ABC	.45	1	.45	.12
error	<u>323.02</u>	<u>87</u>	3.71	
Total	347.75	94		

TABLE 7A
PRETREATMENT MEANS (\bar{x}_1), POSTTREATMENT MEANS (\bar{x}_2) AND MEAN
CHANGE SCORES (D) FOR EACH TREATMENT CONDITION OF THE
DESIGN ON THE MACL CONCENTRATION MOOD

	Experimental Group		Control Group	
	Congruent Therapist	Incongruent Therapist	Congruent Therapist	Incongruent Therapist
Positive Set	$\bar{x}_1 = 8.75$ $\bar{x}_2 = \underline{8.92}$ $D = +.17$	$\bar{x}_1 = 10.08$ $\bar{x}_2 = \underline{9.67}$ $D = -.41$	$\bar{x}_1 = 9.50$ $\bar{x}_2 = \underline{8.50}$ $D = -1.00$	$\bar{x}_1 = 10.33$ $\bar{x}_2 = \underline{9.42}$ $D = -.91$
Neutral Set	$\bar{x}_1 = 11.08$ $\bar{x}_2 = \underline{11.25}$ $D = +.17$	$\bar{x}_1 = 9.42$ $\bar{x}_2 = \underline{8.25}$ $D = -1.17$	$\bar{x}_1 = 9.17$ $\bar{x}_2 = \underline{9.17}$ $D = .00$	$\bar{x}_1 = 10.17$ $\bar{x}_2 = \underline{9.75}$ $D = -.42$

TABLE 8
SUMMARY TABLE OF THE ANALYSIS OF COVARIANCE FOR THE
MACL DEACTIVATION MOOD

Source	ss	df	V	F
A (experimental vs. control)	7.82	1	7.82	1.67
B (congruent vs. incongruent)	25.48	1	25.48	5.43*
C (positive vs. neutral)	.33	1	.33	.07
AB	1.24	1	1.24	.26
AC	.96	1	.96	.20
BC	.48	1	.48	.10
ABC	.70	1	.70	.15
error	<u>407.95</u>	<u>87</u>	4.69	
Total	444.96	94		

*Significant $< .05$.

TABLE 8A
PRETREATMENT MEANS (\bar{x}_1), POSTTREATMENT MEANS (\bar{x}_2) AND MEAN
CHANGE SCORES (D) FOR EACH TREATMENT CONDITION OF THE
DESIGN ON THE MACL DEACTIVATION MOOD

	Experimental Group		Control Group	
	Congruent Therapist	Incongruent Therapist	Congruent Therapist	Incongruent Therapist
Positive Set	$\bar{x}_1 = 4.08$ $\bar{x}_2 = \underline{2.91}$ $D = -1.17$	$\bar{x}_1 = 3.42$ $\bar{x}_2 = \underline{3.67}$ $D = +.25$	$\bar{x}_1 = 3.67$ $\bar{x}_2 = \underline{3.75}$ $D = +.08$	$\bar{x}_1 = 4.08$ $\bar{x}_2 = \underline{4.58}$ $D = +.50$
Neutral Set	$\bar{x}_1 = 4.25$ $\bar{x}_2 = \underline{3.17}$ $D = -1.08$	$\bar{x}_1 = 4.17$ $\bar{x}_2 = \underline{4.33}$ $D = +.16$	$\bar{x}_1 = 4.75$ $\bar{x}_2 = \underline{4.00}$ $D = -.75$	$\bar{x}_1 = 2.25$ $\bar{x}_2 = \underline{3.08}$ $D = +.83$

TABLE 9
SUMMARY TABLE OF THE ANALYSIS OF COVARIANCE FOR THE
MACL SOCIAL AFFECTION MOOD

Source	ss	df	V	F
A (experimental vs. control)	27.15	1	27.15	4.35*
B (congruent vs incongruent)	14.37	1	14.37	2.30
C (positive vs. neutral)	.03	1	.03	.001
AB	19.62	1	19.62	3.14
AC	10.84	1	10.84	1.74
BC	1.36	1	1.36	.22
ABC	22.60	1	22.60	3.62
error	<u>543.18</u>	<u>87</u>	6.24	
Total	639.15	94		

*Significant $< .05$.

TABLE 9A
PRETREATMENT MEANS (\bar{X}_1), POSTTREATMENT MEANS (\bar{X}_2) AND MEAN
CHANGE SCORES (D) FOR EACH TREATMENT CONDITION OF THE
DESIGN ON THE MACL SOCIAL AFFECTION MOOD

	Experimental Group		Control Group	
	Congruent Therapist	Incongruent Therapist	Congruent Therapist	Incongruent Therapist
Positive	$\bar{X}_1 = 6.17$	$\bar{X}_1 = 6.25$	$\bar{X}_1 = 6.08$	$\bar{X}_1 = 8.00$
Set	$\bar{X}_2 = \underline{7.84}$	$\bar{X}_2 = \underline{5.00}$	$\bar{X}_2 = \underline{5.50}$	$\bar{X}_2 = \underline{7.83}$
	D = +1.67	D = -1.25	D = -.58	D = -.17

Neutral	$\bar{X}_1 = 7.58$	$\bar{X}_1 = 7.75$	$\bar{X}_1 = 7.58$	$\bar{X}_1 = 6.42$
Set	$\bar{X}_2 = \underline{8.42}$	$\bar{X}_2 = \underline{8.08}$	$\bar{X}_2 = \underline{6.75}$	$\bar{X}_2 = \underline{5.25}$
	D = +.84	D = +.33	D = -.83	D = -1.17

TABLE 10
SUMMARY TABLE OF THE ANALYSIS OF COVARIANCE FOR THE
MACL ANXIETY MOOD

Source	ss	df	V	F
A (experimental vs. control)	35.35	1	35.35	6.29*
B (congruent vs. incongruent)	4.27	1	4.27	.76
C (positive vs. neutral)	.00	1	.00	.00
AB	6.31	1	6.31	1.12
AC	4.00	1	4.00	.71
BC	.07	1	.07	.01
ABC	8.33	1	8.33	1.48
error	<u>488.92</u>	<u>87</u>	5.62	
Total	547.25	94		

*Significant $< .05$.

TABLE 10A
PRETREATMENT MEANS (\bar{X}_1), POSTTREATMENT MEANS (\bar{X}_2) AND MEAN
CHANGE SCORES (D) FOR EACH TREATMENT CONDITION OF THE
DESIGN ON THE MACL ANXIETY MOOD

	Experimental Group		Control Group	
	Congruent Therapist	Incongruent Therapist	Congruent Therapist	Incongruent Therapist
Positive Set	$\bar{X}_1 = 5.25$ $\bar{X}_2 = \underline{3.75}$ $D = -1.50$	$\bar{X}_1 = 4.92$ $\bar{X}_2 = \underline{5.08}$ $D = +.16$	$\bar{X}_1 = 4.50$ $\bar{X}_2 = \underline{5.08}$ $D = +.58$	$\bar{X}_1 = 4.33$ $\bar{X}_2 = \underline{4.33}$ $D = .00$

Neutral Set	$\bar{X}_1 = 5.84$ $\bar{X}_2 = \underline{4.42}$ $D = -1.42$	$\bar{X}_1 = 3.83$ $\bar{X}_2 = \underline{3.17}$ $D = -.66$	$\bar{X}_1 = 5.67$ $\bar{X}_2 = \underline{5.84}$ $D = +.17$	$\bar{X}_1 = 4.00$ $\bar{X}_2 = \underline{5.00}$ $D = +1.00$

TABLE 11
SUMMARY TABLE OF THE ANALYSIS OF COVARIANCE FOR THE
MACI DEPRESSION MOOD

Source	ss	df	V	V
A (experimental vs. control)	3.04	1	3.04	.78
B (congruent vs. incongruent)	.00	1	.00	.00
C (positive vs. neutral)	.49	1	.49	.13
AB	.86	1	.86	.22
AC	1.24	1	1.24	.32
BC	.37	1	.37	.10
ABC	5.55	1	5.55	1.43
error	<u>337.51</u>	<u>87</u>	3.88	
Total	394.06	94		

TABLE 11A
PRETREATMENT MEANS (\bar{X}_1), POSTTREATMENT MEANS (\bar{X}_2) AND MEAN
CHANGE SCORES (D) FOR EACH TREATMENT CONDITION OF THE
DESIGN ON THE MACI DEPRESSION MOOD

	Experimental Group		Control Group	
	Congruent Therapist	Incongruent Therapist	Congruent Therapist	Incongruent Therapist
Positive Set	$\bar{X}_1 = 3.92$ $\bar{X}_2 = \underline{2.67}$ $D = -1.25$	$\bar{X}_1 = 3.75$ $\bar{X}_2 = \underline{2.92}$ $D = -.83$	$\bar{X}_1 = 3.58$ $\bar{X}_2 = \underline{3.66}$ $D = +.08$	$\bar{X}_1 = 3.75$ $\bar{X}_2 = \underline{2.83}$ $D = -.92$
Neutral Set	$\bar{X}_1 = 5.33$ $\bar{X}_2 = \underline{4.42}$ $D = -.91$	$\bar{X}_1 = 4.17$ $\bar{X}_2 = \underline{3.33}$ $D = -.84$	$\bar{X}_1 = 4.25$ $\bar{X}_2 = \underline{3.42}$ $D = -.83$	$\bar{X}_1 = 3.08$ $\bar{X}_2 = \underline{2.92}$ $D = -.16$

TABLE 12
SUMMARY TABLE OF THE ANALYSIS OF COVARIANCE FOR THE
MACL EGOTISM MOOD

Source	ss	df	V	F
A (experimental vs. control)	4.53	1	4.53	1.09
B (congruent vs. incongruent)	2.10	1	2.10	.51
C (positive vs. neutral)	3.19	1	3.19	.77
AB	.57	1	.57	.14
AC	11.58	1	11.58	2.80
BC	1.33	1	1.33	.32
ABC	2.60	1	2.60	.63
error	<u>359.86</u>	<u>87</u>	4.14	
Total	385.76	94		

TABLE 12A
PRETREATMENT MEANS (\bar{x}_1), POSTTREATMENT MEANS (\bar{x}_2) AND MEANS
CHANGE SCORES (D) FOR EACH TREATMENT CONDITION OF THE
DESIGN ON THE MACL EGOTISM MOOD

	Experimental Group		Control Group	
	Congruent Therapist	Incongruent Therapist	Congruent Therapist	Incongruent Therapist
Positive Set	$\bar{x}_1 = 3.08$ $\bar{x}_2 = \underline{2.50}$ $D = -.58$	$\bar{x}_1 = 3.25$ $\bar{x}_2 = \underline{2.08}$ $D = -1.17$	$\bar{x}_1 = 3.00$ $\bar{x}_2 = \underline{3.08}$ $D = +.08$	$\bar{x}_1 = 2.67$ $\bar{x}_2 = \underline{3.25}$ $D = +.58$
Neutral Set	$\bar{x}_1 = 2.58$ $\bar{x}_2 = \underline{3.08}$ $D = +.50$	$\bar{x}_1 = 2.50$ $\bar{x}_2 = \underline{2.67}$ $D = +.17$	$\bar{x}_1 = 2.58$ $\bar{x}_2 = \underline{3.00}$ $D = +.42$	$\bar{x}_1 = 2.42$ $\bar{x}_2 = \underline{2.17}$ $D = -.25$

TABLE 13

SUMMARY TABLE OF THE ANALYSIS OF COVARIANCE FOR THE
MACL PLEASANTNESS MOOD

Source	ss	df	V	F
A (experimental vs. control)	8.12	1	8.12	1.21
B (congruent vs. incongruent)	39.31	1	39.41	5.89*
C (positive vs. neutral)	43.51	1	43.51	6.50*
AB	.01	1	.01	.001
AC	.02	1	.02	.003
BC	3.57	1	3.57	.54
ABC	13.87	1	13.87	2.07
error	<u>581.76</u>	<u>87</u>	6.69	
Total	690.17	94		

*Significant $< .05$.

TABLE 13A

PRETREATMENT MEANS (\bar{X}_1), POSTTREATMENT MEANS (\bar{X}_2) AND MEAN
CHANGE SCORES (D) FOR EACH TREATMENT CONDITION OF THE
DESIGN ON THE MACL PLEASANTNESS MOOD

	Experimental Group		Control Group	
	Congruent Therapist	Incongruent Therapist	Congruent Therapist	Incongruent Therapist
Positive Set	$\bar{X}_1 = 4.25$ $\bar{X}_2 = \underline{6.67}$ $D = +2.42$	$\bar{X}_1 = 4.33$ $\bar{X}_2 = \underline{4.33}$ $D = .00$	$\bar{X}_1 = 4.42$ $\bar{X}_2 = \underline{5.50}$ $D = +1.08$	$\bar{X}_1 = 4.33$ $\bar{X}_2 = \underline{4.50}$ $D = +.17$

Neutral Set	$\bar{X}_1 = 4.17$ $\bar{X}_2 = \underline{4.17}$ $D = .00$	$\bar{X}_1 = 4.75$ $\bar{X}_2 = \underline{4.42}$ $D = -.33$	$\bar{X}_1 = 4.33$ $\bar{X}_2 = \underline{4.42}$ $D = +.09$	$\bar{X}_1 = 4.17$ $\bar{X}_2 = \underline{2.67}$ $D = -1.50$

TABLE 14
SUMMARY TABLE OF THE ANALYSIS OF COVARIANCE FOR THE
MACL ACTIVATION MOOD

Source	ss	df	V	F
A (experimental vs. control)	2.90	1	2.90	.80
B (congruent vs. incongruent)	1.80	1	1.80	.50
C (positive vs. neutral)	.20	1	.20	.06
AB	5.58	1	5.58	1.54
AC	.47	1	.47	.13
BC	.00	1	.00	.00
ABC	.12	1	.12	.03
error	<u>314.94</u>	<u>87</u>	3.62	
Total	326.01	94		

TABLE 14A
PRETREATMENT MEANS (\bar{X}_1), POSTTREATMENT MEANS (\bar{X}_2) AND MEAN
CHANGE SCORES (D) FOR EACH TREATMENT CONDITION OF THE
DESIGN ON THE MACL ACTIVATION MOOD

	Experimental Group		Control Group	
	Congruent Therapist	Incongruent Therapist	Congruent Therapist	Incongruent Therapist
Positive Set	$\bar{X}_1 = 4.25$ $\bar{X}_2 = \underline{4.00}$ D = -.25	$\bar{X}_1 = 4.00$ $\bar{X}_2 = \underline{3.67}$ D = -.33	$\bar{X}_1 = 4.42$ $\bar{X}_2 = \underline{3.92}$ D = -.50	$\bar{X}_1 = 4.25$ $\bar{X}_2 = \underline{4.50}$ D = +.25
Neutral Set	$\bar{X}_1 = 3.75$ $\bar{X}_2 = \underline{3.50}$ D = -.25	$\bar{X}_1 = 3.58$ $\bar{X}_2 = \underline{3.08}$ D = -.50	$\bar{X}_1 = 3.92$ $\bar{X}_2 = \underline{3.58}$ D = -.34	$\bar{X}_1 = 4.58$ $\bar{X}_2 = \underline{4.98}$ D = +.34

TABLE 15
SUMMARY TABLE OF THE ANALYSIS OF COVARIANCE FOR THE
MACI NONCHALANCE MOOD

Source	SS	df	V	F
A (experimental vs. control)	.87	1	.87	.23
B (congruent vs. incongruent)	1.43	1	1.43	.38
C (positive vs. neutral)	.17	1	.17	.04
AB	3.52	1	3.52	.92
AC	.24	1	.24	.06
BC	8.46	1	8.46	2.22
ABC	.37	1	.37	.10
error	<u>331.90</u>	<u>87</u>	3.81	
Total	346.96	94		

TABLE 15A
PRETREATMENT MEANS (\bar{x}_1), POSTTREATMENT MEANS (\bar{x}_2) AND MEAN
CHANGE SCORES (D) FOR EACH TREATMENT CONDITION OF THE
DESIGN ON THE MACI NONCHALANCE MOOD

	Experiment Group		Control Group	
	Congruent Therapist	Incongruent Therapist	Congruent Therapist	Incongruent Therapist
Positive Set	$\bar{x}_1 = 3.08$ $\bar{x}_2 = \underline{3.25}$ D = +.17	$\bar{x}_1 = 3.42$ $\bar{x}_2 = \underline{2.92}$ D = -.50	$\bar{x}_1 = 3.83$ $\bar{x}_2 = \underline{3.33}$ D = -.50	$\bar{x}_1 = 2.08$ $\bar{x}_2 = \underline{1.75}$ D = -.33

Neutral Set	$\bar{x}_1 = 2.00$ $\bar{x}_2 = \underline{1.83}$ D = -.17	$\bar{x}_1 = 3.08$ $\bar{x}_2 = \underline{3.08}$ D = .00	$\bar{x}_1 = 3.58$ $\bar{x}_2 = \underline{2.58}$ D = -1.00	$\bar{x}_1 = 2.00$ $\bar{x}_2 = \underline{2.58}$ D = +.58

TABLE 16
SUMMARY TABLE OF THE ANALYSIS OF COVARIANCE FOR THE
MACL SKEPTICISM MOOD

Source	ss	df	V	F
A (experimental vs. control)	1.98	1	1.98	.74
B (congruent vs. incongruent)	.49	1	.49	.18
C (positive vs. neutral)	.10	1	.10	.04
AB	.36	1	.36	.13
AC	2.17	1	2.17	.81
BC	.00	1	.00	.00
ABC	.01	1	.01	.004
error	<u>231.87</u>	<u>87</u>	2.67	
Total	236.98	94		

TABLE 16A
PRETREATMENT MEANS (\bar{X}_1), POSTTREATMENT MEANS (\bar{X}_2) AND MEAN
CHANGE SCORES (D) FOR EACH TREATMENT CONDITION OF THE
DESIGN ON THE MACL SKEPTICISM MOOD

	Experimental Group		Control Group	
	Congruent Therapist	Incongruent Therapist	Congruent Therapist	Incongruent Therapist
Positive Set	$\bar{X}_1 = 1.92$ $\bar{X}_2 = 1.75$ $D = -.17$	$\bar{X}_1 = 2.75$ $\bar{X}_2 = 2.50$ $D = -.25$	$\bar{X}_1 = 2.75$ $\bar{X}_2 = 2.33$ $D = -.42$	$\bar{X}_1 = 1.67$ $\bar{X}_2 = 1.75$ $D = +.08$
Neutral Set	$\bar{X}_1 = 2.00$ $\bar{X}_2 = 1.58$ $D = -.42$	$\bar{X}_1 = 2.17$ $\bar{X}_2 = 1.91$ $D = -.26$	$\bar{X}_1 = 3.00$ $\bar{X}_2 = 2.83$ $D = -.17$	$\bar{X}_1 = 1.75$ $\bar{X}_2 = 2.17$ $D = +.42$

TABLE 17
SUMMARY TABLE OF THE ANALYSIS OF COVARIANCE FOR THE
MACL STARTLE MOOD

Source	ss	df	V	F
A (experimental vs. control)	.03	1	.03	.06
B (congruent vs. incongruent)	13.47	1	13.47	26.94***
C (positive vs. neutral)	2.67	1	2.67	5.34*
AB	.04	1	.04	.08
AC	.37	1	.37	.74
BC	1.47	1	1.47	2.94
ABC	.03	1	.03	.06
error	<u>43.70</u>	<u>87</u>	.50	
Total	61.78	94		

***Significant < .001.

**Significant < .05.

TABLE 17A
PRETREATMENT MEANS (\bar{X}_1), POSTTREATMENT MEANS (\bar{X}_2) AND MEAN
CHANGE SCORES (D) FOR EACH TREATMENT CONDITION OF THE
DESIGN ON THE MACL STARTLE MOOD

	Experimental Group		Control Group	
	Congruent Therapist	Incongruent Therapist	Congruent Therapist	Incongruent Therapist
Positive Set	$\bar{X}_1 = 1.42$ $\bar{X}_2 = 1.00$ $D = -.42$	$\bar{X}_1 = 1.17$ $\bar{X}_2 = 1.83$ $D = +.66$	$\bar{X}_1 = 1.50$ $\bar{X}_2 = 1.00$ $D = -.50$	$\bar{X}_1 = 1.25$ $\bar{X}_2 = 1.67$ $D = +.42$
Neutral Set	$\bar{X}_1 = .92$ $\bar{X}_2 = 1.00$ $D = +.08$	$\bar{X}_1 = .92$ $\bar{X}_2 = 1.50$ $D = +.58$	$\bar{X}_1 = 1.00$ $\bar{X}_2 = 1.17$ $D = +.17$	$\bar{X}_1 = 1.25$ $\bar{X}_2 = 1.92$ $D = +.67$

TABLE 18
SUMMARY TABLE OF THE ANALYSIS OF COVARIANCE FOR THE
ADJUSTMENT SCORE

Source	ss	df	V	F
A (experimental vs. control)	40.12	1	40.12	3.04
B (congruent vs. incongruent)	.07	1	.07	.005
C (positive vs. neutral)	20.84	1	20.84	1.58
AB	.16	1	.16	.01
AC	33.34	1	33.34	2.52
BC	3.77	1	3.77	.29
ABC	9.98	1	9.98	.76
error	<u>1,149.70</u>	<u>87</u>	13.21	
Total	1,257.98	94		

TABLE 18A
PRETREATMENT MEANS (\bar{x}_1), POSTTREATMENT MEANS (\bar{x}_2) AND MEAN
CHANGE SCORES (D) FOR EACH TREATMENT CONDITION OF THE
DESIGN ON THE ADJUSTMENT SCORE

	Experimental Group		Control Group	
	Congruent Therapist	Incongruent Therapist	Congruent Therapist	Incongruent Therapist
Positive Set	$\bar{x}_1 = 45.42$ $\bar{x}_2 = \underline{45.75}$ D = +.33	$\bar{x}_1 = 43.17$ $\bar{x}_2 = \underline{42.42}$ D = +.75	$\bar{x}_1 = 39.67$ $\bar{x}_2 = \underline{41.83}$ D = +2.16	$\bar{x}_1 = 44.83$ $\bar{x}_2 = \underline{47.25}$ D = +2.42

Neutral Set	$\bar{x}_1 = 42.00$ $\bar{x}_2 = \underline{41.58}$ D = -.42	$\bar{x}_1 = 46.50$ $\bar{x}_2 = \underline{47.00}$ D = +.50	$\bar{x}_1 = 37.17$ $\bar{x}_2 = \underline{37.50}$ D = +.33	$\bar{x}_1 = 49.58$ $\bar{x}_2 = \underline{49.58}$ D = .00

Changes after treatment on the AACL indicated that the Congruent Therapist, Experimental Group and the Incongruent Therapist, Control Group significantly reduced anxiety when compared to the Incongruent Therapist, Experimental Group and the Congruent Therapist, Control Group ($p < .01$) (see Table 5). Similarly, the MACL Aggression mood indicated that the Congruent Therapist, Experimental Group and the Incongruent Therapist, Control Group significantly reduced aggression when compared to the Incongruent Therapist, Experimental Group and the Congruent Therapist, Control Group ($p < .01$) (see Table 6). These interactions suggest that as measured on the AACL and the MACL mood of Aggression, the superiority of the Experimental Group treatment pertains only for those subjects who are given the congruent therapist instructions, while Experimental Group subjects given the incongruent therapist instructions report "nontherapeutic" changes.

While only three dependent variables significantly distinguished between the Experimental Group and Control Group (in addition to two interaction effects) and the Adjustment Score indicated no difference as predicted, no dependent variables significantly changed in a direction opposite to that predicted. Thus Hypothesis 1 appears to be supported.

Hypothesis 11 states that subjects, when offered a "psychotherapist" who is congruent with their expectancies, will show more "positive therapeutic changes" on the dependent variables than subjects assigned a "psychotherapist" who is incongruent with their expectations. This was found to be the case in the analysis of the main effects in four of the 14 dependent variables. The AACL showed that subjects given a therapist congruent with their expectations decreased anxiety after treatment

significantly more than those subjects who were assigned a therapist incongruent with their expectations (who increased slightly in anxiety) ($p < .001$) (see Table 5). Similarly, the Congruent Group showed a significantly higher increase in the MACL mood of Pleasantness ($p < .05$) than the Incongruent Group which decreased slightly on this mood (see Table 13). Further, the Incongruent Therapist Group displayed a significant increase on the MACL mood of Deactivation ($p < .05$) when compared to the Congruent Group, which decreased on this mood (see Table 8). Also, the Incongruent Therapist Group reported a significantly higher increase in the MACL mood of Startle after treatment ($p < .001$) than the Congruent Therapist Group which decreased slightly in Startle (see Table 17). While only four dependent variables significantly distinguished between the Congruent and Incongruent Therapist Groups (in addition to two interaction effects), and the Adjustment Score indicated no difference as predicted, no dependent variables significantly changed in the unpredicted direction. Thus, Hypothesis II appears to be supported. (The factor analytic studies of Apfelbaum (1958) suggest that three basic types of psychotherapists may be described on the Expectation Q-sort. Inspection of the data suggest that the sample does not show a trend toward describing a particular type of psychotherapist. Similarly, an individual subject does not clearly choose one or another of Apfelbaum's three types of psychotherapists.)

Hypothesis III states that subjects who are given a more positive set concerning the value and outcome of treatment will display more "positive therapeutic changes" on the dependent variables than subjects given a more neutral set. This was found to be the case upon analysis of two

dependent variables. The Positive Set Group Increased significantly less on the MACL mood of Startle after treatment than did the Neutral Set Group which Increased more ($p < .05$) (see Table 17). The Positive Set Group also reported a significantly higher Increase on the MACL mood of Pleasantness ($p < .05$) than the Neutral Set Group which decreased reported pleasantness after treatment (see Table 13). Only two of the 13 dependent variables which were expected to change significantly distinguished between the positive and neutral set groups. Of particular note is the fact that no significant changes were demonstrated on either the AACL or the MACL mood of Anxiety. However, as predicted, no change occurred on the Adjustment Score and no dependent variables changed significantly in the unpredicted direction. Thus, the hypothesis appears supported.

In summary, those dependent variables which demonstrated significant differences between one or more of the three independent variables were: the AACL and the MACL moods of Aggression, Social Affection, Deactivation, Anxiety, Pleasantness and Startle. Those dependent variables which did not significantly distinguish between any of the three independent variables were Dymond's Adjustment Score (as predicted) and the MACL moods of Concentration, Depression, Egotism, Skepticism, Nonchalance and Activation.

As noted earlier, after Nowlis factor analyzed the MACL he divided his 12 mood factors into three groups of four moods each: those moods most clearly identified, those less clearly identified and those least clearly identified (see Table 4). It is noteworthy that of the four moods in the group most clearly identified by Nowlis, three were found to

distinguish significantly between the independent variables; of the four moods in the less clearly identified group, two were found to distinguish significantly between the independent variables; and of the four moods in the least clearly identified category, only one was found to distinguish significantly between the independent variables. The AACL, the scale with the greatest number of items, and probably, therefore, the scale with the highest reliability, showed significant differences between two of three main effects (independent variables). Below is a summary table which on the vertical axis lists the three independent variables and their interactions. On the horizontal axis is listed the 14 dependent variables and entered into the body of the table are the levels of significance at which a null hypothesis might be rejected.

Although seven dependent variables did not reflect significant differences between any of the treatment conditions, there were changes worth noting in several of them. For example, the MACL mood of Depression was found to decrease after treatment in all treatment conditions except one: the Positive Set, Congruent Therapist, Control Group condition where a small increase in reported depression occurred (see Table 11A). Evaluation by the Signs Test (Siegel, 1956) shows that the probability of seven out of eight cells decreasing by chance is at less than the .035 level. This indicates that a reported decrease in depression tends to occur after treatment, regardless of the specific nature of the treatment within the study. The MACL mood of Concentration, similarly, did not result in any statistically significant differences between the treatment conditions. However, the Congruent Therapist, Experimental Group condition was the only treatment which described an increase in

concentration (see Table 7A). The MACL mood of Skepticism also displayed no statistically significant differences between the independent variables. However, the Incongruent Therapist, Control Group condition reported a slight increase in skepticism after treatment while all others reported a decrease in skepticism after treatment (see Table 16A).

Hypothesis IV states that no relationship exists between differences in certain subject characteristics and changes in the dependent variables. This was evaluated by multiple regression technique. The subject differences under consideration were age, level of Intelligence (Beta Intelligence Test, 1946), level of neuroticism (MPI, 1959) and level of Introversion (MPI, 1959). Analysis of variance (Lindquist, 1953) was used to demonstrate that each of these four subject variables was randomly distributed across the eight treatment conditions. (The summary tables for these analyses on age and level of intelligence are presented in the Subjects section of the Method chapter. Below are the summary tables demonstrating the random distribution of Introversion (Table 20) and neuroticism (Table 21).

Pearson product-moment correlations were computed between each of these four variables and the change in scores from pre- to posttreatment testing on each of the 14 dependent variables. This was done for each of the eight treatment conditions. This resulted in 448 correlations which are presented below in Tables 22, 23, 24, and 25. At the .05 level of significance, by chance alone we would expect 24 significant correlations out of the total 448. In the present data, by frequency count, there are 26 correlations which are significant at the .05 level. This suggests that, over-all, the null hypothesis appears supported. It is difficult

TABLE 20
SUMMARY TABLE OF AN ANALYSIS OF VARIANCE DEMONSTRATING THE
RANDOM DISTRIBUTION OF MPI INTROVERSION SCORES

Source	ss	df	V	F
A (experimental vs. control)	19.26	1	19.26	.34
B (congruent vs incongruent)	31.51	1	31.51	.55
C (positive vs. neutral)	33.84	1	33.84	.59
AB	52.51	1	52.51	.92
AC	.02	1	.02	.00
BC	128.35	1	128.35	2.25
ABC	31.50	1	31.50	.55
w Cells	<u>5,012.75</u>	<u>88</u>	56.96	
Total	5,309.74	95		

(An F of 3.95 is significant at the .05 level.)

TABLE 21

SUMMARY TABLE OF AN ANALYSIS OF VARIANCE DEMONSTRATING THE
RANDOM DISTRIBUTION OF MPI NEUROTICISM SCORES

Source	ss	df	V	F
A (experimental vs. control)	2.06	1	2.06	.01
B (congruent vs. incongruent)	408.38	1	408.38	2.04
C (positive vs. neutral)	135.40	1	135.40	.68
AB	.37	1	.37	.00
AC	57.02	1	57.02	.28
BC	376.03	1	376.03	1.88
ABC	63.37	1	63.37	.32
w Cells	<u>17,623.33</u>	<u>88</u>	200.27	
Total	18,665.96	95		

(An F of 3.95 is significant at the .05 level.)

to attribute a high degree of conclusiveness to results showing some consistency in the absence of significance. However, there are several observations which may be made and several trends worth identifying. It is important to note, also, that the complexity of both the data and the independent variables tends to reduce the meaningfulness of interpretation.

It will be noted in Table 22 that there is a tendency for subjects, given a positive set and a congruent therapist and who score lower measured levels of intelligence, to decrease reported anxiety on the AACL after treatment. Conversely, this suggests that subjects with higher measured intelligence, when given a positive set and a congruent therapist, increase reported anxiety on the AACL after treatment. Similarly, subjects with lower measured intelligence, who are given a positive set and an incongruent therapist, seem to increase their scores on the AACL after treatment more than subjects with higher measured intelligence. It will be noted further, with the exception of the Experimental Group, Neutral Set, Congruent Therapist subjects (which showed an opposite trend), less bright subjects tend to increase the MACL mood of Activation after treatment. From these data, the conclusion may be tentatively advanced that people with lower intelligence seem to change in a therapeutic direction after certain types of placebo treatment. On the other hand, with the exception of the Experimental Group, Positive Set, Congruent Therapist, there appears to be a trend which suggests that subjects with higher measured intelligence tend to increase more on the MACL mood of Social Affection after treatment than subjects who score lower on intelligence. This finding suggests a conclusion which is not in line with that indicated above from the analysis of the AACL and the MACL mood of

TABLE 22

PEARSON PRODUCT-MOMENT CORRELATIONS BETWEEN SUBJECTS' CHANGE SCORES FROM PRE- TO POSTTREATMENT TESTING ON EIGHT OF THE DEPENDENT VARIABLES AND SCORES ON THE BETA INTELLIGENCE TEST. THE DATA ARE PRESENTED FOR EACH OF THE EIGHT TREATMENT CONDITIONS

Treatment Conditions	Moods of the MACL													Adjustment Score
	AACL	Aggr.	Conc.	Deact.	So. Aff.	Anx.	Depr.	Egot.	Pleas.	Activ.	Nonch.	Skept.	Start.	
Experimental Group														
Positive Set, Congruent Therapist	+ .36	+ .10	-.29	+ .42	-.11	+ .22	+ .37	+ .09	-.28	-.50	-.24	+ .31	+ .49	-.24
Positive Set, Incongruent Therapist	-.51	+ .05	+ .11	+ .20	+ .43	-.44	-.23	-.15	+ .39	-.23	+ .52	-.18	-.61*	+ .48
Neutral Set, Congruent Therapist	+ .20	+ .34	-.50	+ .02	+ .26	+ .04	+ .09	-.35	+ .07	+ .18	.00	+ .01	+ .52	-.50
Neutral Set, Incongruent Therapist	-.13	-.39	+ .19	-.89*	+ .54*	-.44	-.11	+ .60*	-.04	-.32	-.18	-.10	-.73*	-.27
Control Group														
Positive Set, Congruent Therapist	+ .45	-.07	-.27	-.27	+ .06	+ .35	-.33	+ .02	+ .31	-.27	-.27	+ .26	+ .37	-.01
Positive Set, Incongruent Therapist	-.33	+ .02	-.36	+ .13	+ .10	-.53*	-.18	-.10	+ .08	-.25	-.10	-.37	-.12	+ .08
Neutral Set, Congruent Therapist	+ .05	-.32	-.13	-.05	+ .25	+ .31	+ .09	-.18	-.24	-.02	-.17	+ .01	-.22	-.09
Neutral Set, Incongruent Therapist	+ .11	+ .41	+ .18	+ .06	+ .09	+ .07	-.05	-.28	-.15	-.38	-.26	-.26	+ .07	+ .16

*Significant $< .05$.

Activation. That is, in this case, brighter subjects tend to increase Social Affection (personal comfort) as a result of the placebo situation, while in the former case, brighter subjects appear to increase anxiety and become less active. Of further interest is another tentative finding suggesting that brighter subjects, when given a congruent therapist, tend to increase scores on the MACL Skepticism mood after treatment, but decrease skepticism after treatment when given an incongruent therapist.

From Table 23 several interesting, but also tentative relationships may be discussed. In the Experimental Group, the more introverted subjects who are given the Positive Set, Congruent Therapist Instructions tend to increase reported Social Affection after treatment. However, the more introverted subjects who are given the Neutral Set, Incongruent Therapist Instructions tend to decrease the MACL mood of Social Affection. An additional trend (with the exception of the Control Group, Neutral Set, Incongruent Therapist subjects) appears to be that introverted subjects, more than extroverted subjects, tend to decrease scores on the MACL mood of Skepticism after treatment.

Several relationships presented in Table 24 may be tentatively discussed. It appears that in the positive set cells of the Experimental Group and in the neutral set cells of the Control Group the older the subject, the larger the increase in the MACL mood of Social Affection. Similarly, in the positive set cells of both the Experimental and Control Groups, the younger the subject the greater the increase in reported MACL Egotism mood after treatment. Another effect appears to exist in the relationships between age and change in anxiety after treatment. On both the AACL and the MACL Anxiety mood, it is noted that younger subjects

TABLE 23

PEARSON PRODUCT-MOMENT CORRELATIONS BETWEEN SUBJECTS' CHANGE SCORES FROM PRE- TO POSTTREATMENT TESTING ON EACH OF THE DEPENDENT VARIABLES AND SCORES ON THE MPI INTROVERSION (LOW SCORES)-EXTROVERSION (HIGH SCORES). THE DATA ARE PRESENTED FOR EACH OF THE EIGHT TREATMENT CONDITIONS

Treatment Conditions	AACL	Moods of the MACL												Adjustment Score
		Aggr. Conc.		Deact.	So. Aff.	Anx.	Depr.	Eqot.	Pleas.	Activ.	Nonch.	Skept.	Start.	
Experimental Group														
Positive Set, Congruent Therapist	+.21	+.03	-.21	+.10	-.54*	+.01	+.20	+.32	-.07	+.57*	+.53*	+.44	+.25	+.71*
Positive Set, Incongruent Therapist	+.06	-.12	+.09	-.46	-.25	-.16	+.05	+.51	+.03	+.41	+.13	+.21	+.24	-.13
Neutral Set, Congruent Therapist	+.07	+.02	-.11	-.33	-.14	+.03	-.06	+.14	-.31	-.11	+.29	+.40	-.13	+.26
Neutral Set, Incongruent Therapist	-.02	-.31	+.09	-.11	+.60*	+.41	-.28	-.36	+.02	+.01	+.01	+.01	-.51	+.01
Control Group														
Positive Set, Congruent Therapist	+.12	-.36	-.52	.00	-.59*	+.30	-.08	-.06	-.16	+.06	+.10	+.30	+.57*	-.03
Positive Set, Incongruent Therapist	-.07	+.52	+.08	+.08	-.40	-.05	+.14	+.37	-.28	+.32	+.48	+.02	-.03	-.04
Neutral Set, Congruent Therapist	+.31	+.04	-.05	+.11	+.35	-.37	+.40	-.24	+.37	+.29	-.04	+.61*	-.15	-.36
Neutral Set, Incongruent Therapist	-.27	-.18	-.14	-.25	-.17	+.01	+.11	+.29	-.17	-.65*	+.15	-.33	-.19	-.30

*Significant $< .05$.

TABLE 24

PEARSON PRODUCT-MOMENT CORRELATIONS BETWEEN SUBJECTS' CHANGE SCORES FROM PRE- TO POSTTREATMENT TESTING ON EACH OF THE DEPENDENT VARIABLES AND SUBJECTS' AGES. THE DATA ARE PRESENTED FOR EACH OF THE EIGHT TREATMENT CONDITIONS

Treatment Conditions	Moods of the MACL														Adjustment Score
	AACL	Aggr.	Conc.	Deact.	So. Aff.	Anx.	Depr.	Egot.	Pleas.	Activ.	Nonch.	Skept.	Start.		
Experimental Group															
Positive Set, Congruent Therapist	+ .07	+ .07	+ .19	+ .06	+ .49	+ .11	- .19	- .36	- .35	- .41	- .56*	+ .14	+ .14	- .51	
Positive Set, Incongruent Therapist	+ .36	+ .42	+ .32	+ .06	+ .50	+ .45	+ .51	- .24	+ .14	- .06	- .32	- .07	- .03	- .05	
Neutral Set, Congruent Therapist	+ .51	+ .01	- .34	+ .13	- .22	+ .32	- .20	+ .30	+ .03	- .05	+ .06	+ .52	+ .50	+ .50	
Neutral Set, Incongruent Therapist	+ .03	+ .23	- .10	.00	- .25	+ .06	- .25	+ .39	+ .41	- .02	+ .48	+ .49	- .14	- .48	
Control Group															
Positive Set, Congruent Therapist	+ .37	- .22	+ .16	- .33	- .45	+ .18	- .07	- .28	- .20	- .01	- .36	- .66*	- .08	- .59*	
Positive Set, Incongruent Therapist	+ .25	+ .15	+ .20	- .43	- .21	+ .26	- .19	- .18	+ .21	+ .24	- .22	- .21	- .29	- .15	
Neutral Set, Congruent Therapist	- .60*	+ .02	+ .36	+ .12	+ .31	+ .23	+ .02	+ .28	+ .32	+ .30	- .01	+ .05	- .24	+ .41	
Neutral Set, Incongruent Therapist	- .12	- .29	+ .22	- .31	+ .18	- .25	+ .19	+ .06	- .09	+ .06	+ .42	- .38	+ .14	+ .03	

*Significant $< .05$.

decrease reported anxiety after Experimental Group treatment more readily than do older subjects. This is especially so for the Positive Set, Incongruent Therapist and Neutral Set, Congruent Therapist conditions.

Eysenck defined his Neuroticism Scale as a measure extending along a highly neurotic to normal continuum. In the current study, the sample contains no "normals," therefore, serious questions may be raised concerning the meaningfulness of the neuroticism score. For example, does a low score on neuroticism in this study mean that a patient is psychotic? A biserial correlation (McNemar, 1955) between diagnosis (psychotic vs. nonpsychotic) and scores on the Neuroticism Scale results in a correlation of .57 ($p < .001$). This suggests that subjects with nonpsychotic diagnoses tend to score high on the Neuroticism Scale while subjects with psychotic diagnoses tend to score lower. However, this correlation accounts for only 32.49 per cent of the variance, and it is with extreme caution that interpretation of the neuroticism score data be made.

As noted in Table 25, an apparent relationship exists between neuroticism scores and the MACL mood of Nonchalance. With the exception of the Experimental Group, Neutral Set, Congruent Therapist subjects, it appears that as neuroticism increases, nonchalance decreases after treatment. Another interesting relationship indicates that subjects scoring high on the Neuroticism Scale who are in the Positive Set, Congruent Therapist, Control Group decrease their MACL mood of Startle after treatment; while subjects scoring high on the Neuroticism Scale who are in the Neutral Set, Incongruent Therapist, Control Group increase this Startle mood after treatment.

TABLE 25

PEARSON PRODUCT-MOMENT CORRELATIONS BETWEEN SUBJECTS' CHANGE SCORES FROM PRE- TO POSTTREATMENT TESTING ON EACH OF THE DEPENDENT VARIABLES AND SCORES ON THE MPI NEUROTICISM SCALE. THE DATA ARE PRESENTED FOR EACH OF THE EIGHT TREATMENT CONDITIONS

Treatment Conditions	Moods of the MACL													Adjustment Score
	AACL	Aggr.	Conc.	Deact.	So. Aff.	Anx.	Depr.	Egot.	Pleas.	Activ.	Nonch.	Skept.	Start.	
Experimental Group														
Positive Set, Congruent Therapist	-.08	+.19	+.51	-.12	+.52	+.17	-.43	-.46	-.36	-.39	-.43	-.29	-.24	-.56*
Positive Set, Incongruent Therapist	+.18	-.23	-.37	-.03	-.06	+.07	+.41	-.22	+.01	-.38	-.59*	-.38	+.03	-.43
Neutral Set, Congruent Therapist	-.24	-.41	+.14	+.13	+.04	+.43	+.09	+.42	+.70*	+.34	+.26	-.23	+.20	-.06
Neutral Set, Incongruent Therapist	-.13	+.02	+.29	+.12	-.03	+.56*	+.21	+.12	+.45	+.42	-.07	+.48	+.12	-.51
Control Group														
Positive Set, Congruent Therapist	-.01	+.03	+.52	-.17	+.68*	-.14	+.08	+.03	-.16	+.19	-.18	-.17	-.69*	-.10
Positive Set, Incongruent Therapist	-.29	-.28	-.37	-.15	+.16	-.27	-.60*	-.30	-.12	-.41	-.28	-.02	-.30	+.42
Neutral Set, Congruent Therapist	-.38	+.26	+.37	+.10	-.28	+.39	-.36	+.35	-.36	+.13	-.14	-.30	-.11	+.43
Neutral Set, Incongruent Therapist	+.17	+.20	-.34	+.40	-.19	+.47	+.15	-.16	+.23	-.22	-.35	+.20	+.56*	+.04

*Significant $< .05$.

It is believed sufficiently important to stress once again the tentativeness of all relationships discussed under Hypothesis IV. It is this writer's opinion that due to the low number of significant correlations, the data basically support the null hypothesis that no conclusively meaningful relationships exist between the dependent variables and the measured individual differences.

It was believed that a subject's reported level of desire for psychotherapy would be related to his amount of verbalization when he was permitted to speak to the "psychotherapist." The tenability of this belief was evaluated by multiple regression technique utilizing only the Experimental Group and the correlations are presented below in Table 26.

TABLE 26

MULTIPLE REGRESSION COEFFICIENTS BETWEEN AMOUNT OF SPEECH AND
DESIRE FOR PSYCHOTHERAPY PRESENTED FOR EACH INDEPENDENT
VARIABLE (EXPERIMENTAL DATA ONLY)

	Congruent Therapist	Incongruent Therapist	Positive Set	Neutral Set
Amount of Speech vs. Desire for Psychotherapy	.50	.02	.49	.08
	n = 24	n = 24	n = 24	n = 24

Amount of verbalization, which was originally rated on a four-point continuum (see p. 26) was divided, for the purpose of this evaluation, into two groups: (1) constant speakers and moderate speakers, and (2) little speakers and no speech. Desire for psychotherapy was rated on a three-point scale by each subject (see Appendix F).

The correlations presented in Table 26 suggest that if a subject's desire for psychotherapy is high, his amount of verbalization is high if he is given a congruent therapist and/or a positive set. If, however, he is given an incongruent therapist and/or a neutral set there is no relationship between his desire for psychotherapy and his amount of speech.

Presented below in Table 27 are co-relationships between (1) amount of speech; (2) desire for psychotherapy; and (3) diagnosis on the one hand, and change scores from pre- to posttesting on the AACL and the moods most clearly identified by Nowlis on the other (data only for the Experimental Group).

One interesting conclusion which may be drawn from these data concerns the relationship between amount of speech and change scores on the AACL. It appears that subjects who speak the most increase anxiety from pre- to posttreatment testing. This is true in all treatment conditions and the correlation for all groups is $+ .30$ ($p < .05$). Of further interest is the fact that level of desire for psychotherapy does not appear, by inspection, to appreciably influence the amount of change on these five dependent variables from pre- to posttreatment testing. Similarly, by inspection, diagnosis (psychotic or nonpsychotic) does not appear to be related to the amount of reported change in personal comfort after treatment as measured by the five dependent variables.

TABLE 27

MULTIPLE REGRESSION COEFFICIENTS BETWEEN THE VARIABLES LISTED ON THE VERTICAL AXIS AND FIVE DEPENDENT VARIABLE CHANGE SCORES FOR THE EXPERIMENTAL GROUP. THE DATA ARE PRESENTED SEPARATELY FOR EACH OF THE INDEPENDENT VARIABLES IN ADDITION TO THE TOTAL EXPERIMENTAL GROUP

	Moods of the MACL					So. Aff.
	AACL	Aggr.	Conc.	Deact		
Congruent Therapist Instructions (n = 24)						
Incongruent Therapist Instructions (n = 24)						
Positive Set (n = 24)						
Neutral Set (n = 24)						
All Experimental Group Subjects (n = 48)						

*Significant < .05.

**Significant < .01.

DISCUSSION

As mentioned in the introduction, the literature supporting the efficacy of psychotherapy has not demonstrated that personality and behavioral modifications which occur as a result of psychotherapy are entirely due to a psychotherapist's behavior and techniques (specific factors). The outcome of treatment, it was suggested, is a function of both the specific and the nonspecific (placebo) events occurring during psychotherapy, although, in the literature, the presence and the contribution of the placebo effect in psychotherapy appear to be entirely conjectural.

This study appears to demonstrate that the placebo effect in psychotherapy does exist. Subject-patients who spoke into a tape recorder for one session, believing that they were speaking to a psychotherapist, changed certain behaviors in therapeutic directions when compared to subjects who did not speak (see Hypothesis 1). That is, it has been shown that verbally reported patient behaviors such as anxiety and certain moods which would be expected to change as a result of therapist behavior in actual psychotherapy, also change, in fact, as a result of the placebo psychotherapy (nonspecific treatment) in which a therapist is absent. The group who spoke to the "psychotherapist" for one session, when compared to the group who waited, increased their Social Affection mood on the MACL and reduced their level of anxiety as measured on both the AACL and the MACL Anxiety mood.

As a result of these findings in the current study, it is proposed that the placebo effect does contribute to the outcome of psychotherapy, and that a measurement of the amount of contribution appears to have been made. However, it is important to question precisely what has been evaluated by a comparison between the Experimental Group (talkers) and the Control Group (waiters). If the subjects who spoke received placebo treatment and the subjects who waited received no treatment, the statistical comparison between these two groups was an accurate measurement of the placebo effect. However, it is believed that those in the Control Group, who waited, but were promised a therapist, and who changed on the dependent variables in a generally "nontherapeutic" direction, received some placebo benefit from the procedure (e.g., see Tables 11A and 13A). This finding does not influence the conclusion that the placebo effect in psychotherapy does exist, however, the precise therapeutic benefit of the placebo, as measured in this study, has not been compared to the therapeutic benefit of no placebo treatment. Instead, the comparison between the Experimental and Control Groups appears to have been an analysis between a more effective (Experimental Group) and a questionably effective (Control Group) placebo treatment.

In addition to congruence of expectations regarding the characteristics of the assigned psychotherapist and positive set regarding treatment outcome (see below), may other "psychologic mechanisms" through which the placebo effect takes place (Shapiro, 1964) be identified in order to account for the finding that this treatment did result in a placebo effect? Shapiro (1964) reports that throughout the history of medicine, "methods of depletion (which are currently accepted as placebos)

were widely used (to effect cures): emetics, cathartics, enemas, purges, stomachics, sweating, bleeding, leeching, cupping, starvation and dehydration. Methods of depletion and expulsion . . . may relieve symptoms by symbolically expelling bad thoughts and conflictual ego-alien impulses." In our more sophisticated and verbally oriented culture, Shapiro continues, "relief of symptoms may occur when the patient is able to express verbally conflictual and guilt-ridden thoughts and feelings in the free, nonjudging and accepting atmosphere of the doctor's office" (p. 81). In other words, verbal catharsis, it appears, may theoretically lie at the basis of the placebo effect in psychotherapy, just as physical-mechanical catharsis lay at the basis of medical treatment which today is widely looked upon as placebo. The treatment in this experiment is conducted in an obviously free, accepting and nonjudgmental atmosphere and each patient-subject may establish his own personal optimal level of catharsis. It would seem logical then, that catharsis may be a major underlying factor for the placebo effect in psychotherapy, at least in so far as outcome of psychotherapy is measured in this study. It is interesting, in this regard, however, that the data indicate that a linear relationship does not exist between amount of speech (loosely, catharsis) during the "Interview" and degree of change on the dependent variables. In fact, in this context, although one significant correlation among the 25 computed would be expected to be significant by chance alone, the only significant correlation (.05 level) which does exist, suggests that the more a subject speaks, the greater the likelihood that his anxiety level (AACL) will increase. These correlations, however, evaluate only the amount of speech in relation to the dependent variable changes after treatment. The

analysis does not assess content of speech or nature of affect which are certainly extremely significant aspects of catharsis. In addition, this analysis evaluates only the linear relationships between amount of speech and degree of change on the dependent variables. The analysis does not deal with nonlinear relationships, and it is conceivable that such relationships might exist.

Shapiro (1964) reports that expressed desire for treatment is another important concept which reportedly is basic in eliciting the placebo effect. That is, those subjects who are more highly motivated for treatment would be more responsive to placebo treatment. However, in this study, motivation of the subjects, as measured by their statements concerning their level of desire for psychotherapy, is not linearly related to the amount or nature of change after treatment as measured on the dependent variables. Interestingly, however, when subjects who report high motivation for psychotherapy are given a positive set concerning the outcome of the treatment and/or are offered a therapist who is congruent with their expectancies they tend to speak more. That is, greater reported desire for psychotherapy is related to a larger amount of verbal catharsis; however, it is unrelated to changes on the measures of mood and anxiety after placebo psychotherapy when a therapist is absent.

It appears, thus, that in this study, catharsis or degree of motivation, or both, have not been shown to underlie the placebo effect. Shapiro (1964), in his review of placebo literature, indicates that a great number of "psychologic mechanisms" have been proposed as being underlying characteristics of the placebo effect. Several are: catharsis,

motivation, faith, learning and conditioning, trust, confidence and previous experience with healers.

Shapiro (and Whitehorn, 1958) further indicate that no single characteristic of treatment has been consistently shown to underlie and to produce the placebo effect. The conflicting and inconclusive evidence in the literature is most conceivably due to the unclear nature of the placebo effect, differences of measurement of the effect from research to research and the different theoretical frameworks within which different experiments are planned.

Thus far, the discussion has been concerned with the contrast between the Experimental Group (talkers) and the Control Group (waiters) and several of the characteristics of psychological treatment which may determine the placebo effect. The conditions under which the placebo effect is most likely to take place or most likely to be lessened, are further clarified when attention is drawn to the way in which the treatment groups were divided within the present experiment. Analysis of Hypothesis II, indicates that patients who are offered a "psychotherapist" congruent with their expectations, report more "positive therapeutic changes" on measures of anxiety and moods than do patients who are assigned a psychotherapist who is incongruent with their expectations concerning the nature of the psychotherapist to be assigned. That is, the subject's perception of the treater or doctor is a significant aspect in encouraging or discouraging the placebo effect.

Festinger (1957) and Festinger and Bramel (Bachrach, 1962) propose that dissonance results when two cognitions which a person holds are inconsistent with each other according to the expectations of the person.

Dissonance is said to be a motivating state which is comparable to other drive states, and just as hunger produces physical discomfort, dissonance results in psychological discomfort. When a patient-subject is instructed that the characteristics of his psychotherapist are incongruent with his personal expectations concerning this psychotherapist, the patient-subject experiences dissonance. This in turn, reduces the effectiveness of the placebo treatment, as is shown by the statistical analyses which indicate that the AACL and MACL moods of Startle and Deactivation decreased significantly more for the Congruent Therapist Group, while the MACL mood of Pleasantness increased significantly more in the Congruent Therapist Group.

(It is noteworthy that although the Apfelbaum questionnaire [see Appendix E] instructs subjects to respond on the basis of their expectations, any individual subject may have completed the items in terms of his ideal psychotherapist or in terms of a desired psychotherapist. There is no apparent way in which to evaluate these possibilities. If, however, any individual subject did respond in terms of an ideal or a desired psychotherapist, he may have received additional, or reduced, positive set, in addition to having the nature of the treater confirmed or not confirmed.)

In addition to demonstrating that the patient's perception of the nature of the treater is one significant aspect of inducing a greater or lesser placebo effect, this research also suggests that the nature of the treatment situation itself is important. Analysis of Hypothesis III indicates that subjects who are told that the placebo psychotherapy will be extremely helpful to them (Positive Set Group) profit more from the

treatment than those subjects with whom positive treatment outcome is not discussed (Neutral Set Group). This conclusion is somewhat less certain than those drawn from hypotheses I and II. This is so because only two of the dependent variables (MACL moods of Startle and Pleasantness) indicated that the positive set was significantly more effective in encouraging the placebo effect than the neutral set. The literature which served as the impetus for introducing this independent variable (positive vs. neutral set) into the current study, apparently uniformly indicates that positive set or attitude toward a particular placebo treatment increases the placebo effect. (For example, see pp. 45-46 of the present study and also social psychological research on set and frames of reference: Newcomb, 1958, pp. 264-297; Maccoby et al., 1958, p. 95.)

Why hasn't the current study demonstrated more conclusively that a positive set concerning treatment outcome is even more important in securing a placebo effect, as might be anticipated on the basis of the literature? Two explanations are suggested. On the one hand, it is possible that the wording of the two instructional sets (constructed by the author) were not sufficiently different and thus, two entirely separate groups concerning expectation of treatment outcome may not have been established. On the other hand, it will be noted (see Appendix A) that the Positive Set instructions emphasized the reputation and demand for the alleged psychotherapist, in addition to his willingness to help the subject. It is possible that instructions stressing this psychotherapist's professional reputation and the demand for his services did not increase the positive nature of the set for this particular group of subjects as a whole. Thus, portions of the Positive Set instructions may not have

served the purpose for which they were intended. (By stressing characteristics of the psychotherapist, this aspect of the instructions may have had little influence on the level of set but may have had some vicarious influence on the congruence or incongruence of the psychotherapist for any particular subject.)

In summarizing the results of the analysis of hypotheses I, II and III, the following may be said: The placebo effect in psychotherapy does exist and through the technique of this study appears to be measurable. Further, the placebo effect is apparently influenced by both the perceived characteristics of the treater, and the projected outcome of the treatment as reported to the patient. The influence of the perceived characteristics of the treater has been approached by analysis of differences on the dependant variables between one group of subjects who were told that a therapist to be assigned to them will be congruent with their expectations, and another group who were told that the therapist will be incongruent with their expectations. The data apparently demonstrate that the group given the congruent therapist responds to the treatment with a greater positive placebo effect. The influence of the reported outcome of the treatment has been approached by analysis of differences on the dependant variables between one group of subjects who were given a positive set concerning treatment outcome and another group who were given a more neutral set. The data suggest that the group given the positive set tends to respond to treatment with a greater positive placebo effect. (However, congruent therapist instructions seem to be more instrumental in encouraging the placebo effect than the "positive set" instructions.)

Having found that offering a therapist who is congruent with a subject's expectations seems to encourage the placebo effect more than offering a positive set concerning treatment outcome may have implications beyond the present study. There is a considerable body of research concerned with the matching of patients and therapists and the resulting relationships in psychotherapy (e.g., see Leary and Gill [1959]). In the present study it is seen that matching a therapist with a patient's expectations does, in fact, increase the effectiveness of the treatment to a greater extent than offering a positive set concerning treatment outcome. This is indicated in this placebo situation, where no therapist actually exists; however, it is suggested that in psychotherapy perception of the psychotherapist may also be more valuable than belief about treatment outcome. That is, the nature of the relationship (in this study, a relationship in which the patient perceives his therapist as being congruent with his expectations) may be more essential in successful psychotherapy than statements concerning the value of the treatment itself.

An important finding of this study is that, as predicted, the Adjustment Score, which measures general level of psychological adjustment, does not change after the placebo interview. This is so regardless of the particular treatment (talk vs. wait, congruent therapist vs. incongruent therapist and positive set vs. neutral set) or combination of treatments in the study. This indicates that in a single treatment of placebo psychotherapy, no change in general level of psychological adjustment may take place. Had the placebo psychotherapy continued over a longer period of time would there have been changes in this Adjustment

Score? That is, would extended placebo psychotherapy have produced changes in psychological adjustment similar to changes which occur after actual psychotherapy? (See Frank, 1961, and Rogers and Dymond, 1954, for evidence of changes in general level of psychological adjustment after psychotherapy.) It is difficult to speculate on precisely what may have happened to the subject's general level of psychological adjustment had the placebo treatment continued, although researchers such as Glasser and Whittlow (1953, 1954) submit that the effects of placebo treatment are not permanent and the gains from continued placebo treatment become less and less.

What might have happened to moods and anxiety had the placebo psychotherapy continued? Martin et al (1960), in a study concerned with levels of therapist communications (discussed more fully in the introduction), had subjects speak into a tape recorder for five 30-minute weekly sessions as if they were speaking to a psychotherapist. These authors demonstrate that although some initial positive therapeutic effect was indicated (lowering of anxiety), the procedure lost its positive therapeutic effectiveness as the number of sessions with the tape recorder increased. Glasser and Whittlow (1953, 1954), in placebo drug studies, found that if subjects were given placebos over a period of time and required to answer questionnaires identifying the effects of these placebos, the positive placebo effect was demonstrated initially, but the effect was less upon each successive evaluation. Findings such as these suggest that the placebo procedure used in the current study, if extended for more than one session, might not have continued to have positive therapeutic effect on mood and anxiety.

Analysis of Hypothesis IV gives no clear picture of the contribution to the placebo effect of the individual patient differences in age, intelligence, introversion and neuroticism. This finding is not surprising in view of the existing body of research which is equivocal and often contradictory in regard to this question (see introduction). The evaluation of the data collected to explore this hypothesis resulted in borderline significance and lack of remarkable trends both within the four measured subject differences and within all of the dependent variables across individual subject differences. Even when tentative or apparent trends were identified (as discussed on pp. 49-59), the complexity of the behaviors involved in the eight different combinations of the independent variables makes the meaningfulness of any interpretation of results doubtful. (In addition, the reader is reminded of the questionable use of the Neuroticism Scale or the MPI with this subject sample; see p. 57.) Pearson product-moment correlations were used to evaluate this hypothesis. These only identify linear relationships between the dependent variables and the measured subject differences, and the possibility of a nonlinear relationship cannot be dismissed on the basis of the analysis performed.

The problem of discussing the meaningfulness of the results and the inability to disclose significant trends in the data of this study apparently leads to the acceptance of the null hypotheses which state that, in the present sample, age, intelligence, introversion or neuroticism will not identify the type of subject who responds favorably to placebo psychotherapy. This is in keeping with the findings of Wolf et al. (1957) who indicate that individual subject reactions to placebos are

generally inconsistent, unpredictable and not uniform (see also Hagans et al., 1957, and Kurland, 1957).

A pertinent issue may be raised concerning whether the subjects accepted the placebo treatment as a legitimate form of psychotherapy. There is no way in which to be certain of any conclusion in this regard. However, the nature of changes on the dependent variables certainly suggests that the subjects did perceive the procedure as actual psychotherapy. Moreover, it will be noted that the Skepticism mood on the MACL remained rather constant from pre- to posttreatment testing, and the only groups to report a small and insignificant increase in Skepticism, after having completed the procedure, were the Incongruent Therapist, Control Group subjects (see Table 16A). No subjects reported that they disbelieved the legitimacy of the treatment and the comments several of the subjects made to the examiner and into the tape recorder appear related to the issue of subjects accepting the treatment as real. For example, one subject in the Experimental, Neutral Set, Congruent Therapist Group reported the following into the tape recorder during the placebo therapy: "I appreciate the privilege of being given a chance to express my feelings and views in this way. . . . This is the first chance I've had to honestly and openly express my feelings and opinions and I appreciate it very, very much."

It is hoped that the placebo effects demonstrated in this treatment will be kept in mind in future research on the effects of specific methods in psychotherapy. It is further hoped that this demonstration will lead to the practice of separating effects common to all psychotherapy (e.g., nonspecific placebo effects) from those effects due to the

specific aspects of the therapy being evaluated (e.g., therapist behaviors).

APPENDICES

APPENDIX A
INSTRUCTIONS TO SUBJECTS

INSTRUCTIONS GIVEN TO EACH PAIR OF SUBJECTS PRIOR TO
ESTABLISHING THE TREATMENT CONDITIONS IN THE STUDY

I'd like you men to do several things this afternoon. I think you will enjoy these tasks. You will learn something about yourself and may profit from what we do here for the next hour or so.

(Distribute the personal information questionnaire.)

I'd like for you to answer these questions about yourselves.

(Distribute the Maudsley Personality Inventory.)

The next questionnaire is this one. (Read directions.) Begin.

(Distribute the Anxiety Adjective Check List.)

The next questionnaire is this one. (Read directions.) Please answer honestly the way you feel right now. Begin.

(Distribute the Mood Adjective Check List.)

The next questionnaire is this one which asks you about your mood and the way you feel right now. (Read directions.) Some of the items in this list are like items in the last list, but please answer them anyway. Be honest with yourself and just answer the way you feel right now.

(Distribute the Modification of the Expectation Q-Sort.)

This questionnaire is a little different. It says--(read directions). Now, don't think too long on any of these, but answer them as best you can.

(Distribute the Adjustment Score.)

This questionnaire asks you how you feel about yourself and also about things in general. Read the instructions and work quickly

INSTRUCTIONS GIVEN TO EACH PAIR OF SUBJECTS TO DETERMINE
POSITIVE SET OR NEUTRAL SET

Positive Set Instructions

I can tell you now what this is all about. It's a real good opportunity for you men because you are being given a chance to talk with a great psychiatrist. Now, you can talk to him about anything you'd like

relating to problems you've had, or problems you are having, or problems you can see ahead of you in the future. This psychiatrist has such an excellent reputation that he is an extremely busy man, but he has offered to help you men to solve any problems you may have anyway. Because he is so busy he can't get here to the hospital so he suggested we do something a little differently because he is so interested in helping you. You will simply talk into a tape recorder, and the tape will be sent registered mail to him. I think this is really great because he has helped so many, many people and I'm sure he can help you with any problems you may possibly have.

Neutral Set Instructions

I can tell you now what this is all about. It is an opportunity for you men to talk with a psychiatrist. Now, you can talk to him about anything you'd like relating to problems you've had, or problems you are having, or problems you can see ahead of you in the future. This psychiatrist is an extremely busy man, and he is unable to get here to the hospital so he suggested we do something a little differently. You will simply talk into a tape recorder, and the tape will be sent registered mail to him.

INSTRUCTIONS GIVEN TO EACH PAIR OF SUBJECTS TO DETERMINE CONGRUENT THERAPIST OR INCONGRUENT THERAPIST

Congruent Therapist Instructions

I've been looking over your questionnaire on the way you would expect this psychotherapist or counselor to be, and I see that this psychiatrist is the way you thought he would be. For example, Mr. _____ (subject seated on the Experimenter's right), he (read this subject's responses to Items 7, 14 and 29; see Appendix E). And Mr. _____ (subject seated on the Experimenter's left), he (read this subject's responses to Items 1, 31 and 32; see Appendix E).

Incongruent Therapist Instructions

I've been looking over your questionnaire on the way you would expect this psychotherapist or counselor to be, and I see that this psychiatrist is not exactly the way you thought he would be. For example, Mr. _____ (subject seated on the Experimenter's right), he (read a denial of the accuracy of this subject's responses to Items 7, 14 and 29; see Appendix E). And Mr. _____ (subject seated on the Experimenter's left), he (read a denial of the accuracy of this subject's responses to Items 1, 31 and 32; see Appendix E).

INSTRUCTIONS GIVEN TO EACH PAIR OF SUBJECTS AFTER HAVING
ESTABLISHED THE FOUR TREATMENT CONDITIONS

Mr. _____ (Control Group subject), I'd like for you to wait here for a while. Make yourself comfortable. You can look at some magazines, or rest, but please stay in this room. I'll be back in about forty-five minutes. Mr. _____ (Experimental Group subject), please come with me.

INSTRUCTIONS GIVEN TO THE EXPERIMENTAL GROUP SUBJECT AFTER
BEING SEATED IN THE ROOM WITH THE TAPE RECORDER

Now, this is the tape recorder and the tape that will be sent to the psychiatrist. Just make yourself comfortable, and say whatever you would like into this microphone. The controls on the machine are set, and please remain in your seat until I return. It's OK if there are pauses, and you don't have to talk all of the time. I'll be back in about fifty minutes to get the tape.

INSTRUCTIONS GIVEN TO EACH PAIR OF SUBJECTS AFTER THE EXPERIMENTAL
GROUP SUBJECT IS REUNITED WITH THE CONTROL GROUP SUBJECT

I'd like for you to retake several of these shorter tests. This will only take a few minutes more.

(Distribute the Anxiety Adjective Check List.)

This is the first one. You remember this one, it asks you to check the way in which you feel right now. Please answer honestly the way you feel right now.

(Distribute the Mood Adjective Check List.)

This is the next one. You remember this one, it asks you to mark the way you feel right now. Please answer honestly the way you feel right now.

(Distribute the Adjustment Score.)

This is the next one. Please work as quickly as you can.

INSTRUCTIONS GIVEN TO EACH PAIR OF SUBJECTS
AFTER THE PAIR HAS COMPLETED THE TESTS

Mr. _____ (Experimental Group subject), you may leave now. Mr. _____ (Control Group subject), do you care to speak to the psychiatrist? (If the Control Group subject wishes to speak, he is taken to the tape recorder; if, however, he declines to speak, he is dismissed at this time.)

APPENDIX B

SAMPLE ANXIETY ADJECTIVE CHECK LIST

Name _____

Below you will find words which describe different kinds of feelings. Check the words which describe how you feel RIGHT NOW. Some of the words may sound alike but we want you to check all of the words that describe your feelings.

- | | | |
|---------------------|------------------------|----------------------|
| 1. ____ AFRAID | 21. ____ GAY | 41. ____ PANICKY |
| 2. ____ AGITATED | 22. ____ GLOOMY | 42. ____ PEACEFUL |
| 3. ____ ANGRY | 23. ____ GRIM | 43. ____ PLEASANT |
| 4. ____ BITTER | 24. ____ HAPPY | 44. ____ RATTLED |
| 5. ____ CALM | 25. ____ HELPLESS | 45. ____ SAD |
| 6. ____ CHARMING | 26. ____ HOPELESS | 46. ____ SECURE |
| 7. ____ CHEERFUL | 27. ____ INSECURE | 47. ____ SENTIMENTAL |
| 8. ____ COMPLAINING | 28. ____ JEALOUS | 48. ____ SERIOUS |
| 9. ____ CONTENTED | 29. ____ JOYFUL | 49. ____ SHAKEY |
| 10. ____ CONTRARY | 30. ____ KINDLY | 50. ____ SOLEMN |
| 11. ____ COOL | 31. ____ LIGHT-HEARTED | 51. ____ STEADY |
| 12. ____ CROSS | 32. ____ LONELY | 52. ____ TENDER |
| 13. ____ DESPERATE | 33. ____ LOVING | 53. ____ TENSE |
| 14. ____ EASY-GOING | 34. ____ MAD | 54. ____ TERRIFIED |
| 15. ____ FEARFUL | 35. ____ MEAN | 55. ____ THREATENED |
| 16. ____ FEARLESS | 36. ____ MERRY | 56. ____ THOUGHTFUL |
| 17. ____ FRETFUL | 37. ____ MISERABLE | 57. ____ UNCONCERNED |
| 18. ____ FRIENDLY | 38. ____ NERVOUS | 58. ____ UNEASY |
| 19. ____ FRIGHTENED | 39. ____ OVERCONCERNED | 59. ____ UPSET |
| 20. ____ FURIOUS | 40. ____ OVERWHELMED | 60. ____ WARM |
| | | 61. ____ WORRYING |

APPENDIX C

SAMPLE MOOD ADJECTIVE CHECK LIST

Name _____

Each of the 40 words in the following list describes feelings or mood. Please use the list to describe your feelings at this moment. Mark each word according to these instructions: If the word definitely describes how you feel at the moment you read it, circle the double plus (++) to the right of the word. For example, if the word is calm and you are definitely feeling calm at the moment, circle the double plus as follows:

calm (++) + ? no (This means that you definitely feel calm at this moment.)

If the word only slightly applies to your feelings at the moment, circle the single plus as follows:

calm ++ (+) ? no (This means that you feel slightly calm at this moment.)

If the word is not clear to you or if you cannot decide whether or not it describes your feelings at the moment, circle the question mark as follows:

calm ++ + (?) no (This means you can't decide whether you are calm.)

If you clearly decide that the word does not apply to your feelings at the moment, circle the no as follows:

calm ++ + ? (no) (This means that you are sure that you are not calm at the moment.)

Work rapidly. Your first reaction is best. Work down the column before going to the next. Mark all the words. This should take only a few minutes.

angry ++ + ? no

concentrating ++ + ? no

drowsy ++ + ? no

affectionate ++ + ? no

apprehensive ++ + ? no

blue ++ + ? no

boastful ++ + ? no

elated ++ + ? no

active ++ + ? no

nonchalant ++ + ? no

skeptical ++ + ? no

shocked ++ + ? no

bold ++ + ? no
 earnest ++ + ? no
 sluggish .. ++ + ? no
 forgiving .. ++ + ? no
 clutched up .. ++ + ? no
 lonely ++ + ? no
 cocky ++ + ? no
 lighthearted .. ++ + ? no
 energetic .. ++ + ? no
 playful ++ + ? no
 suspicious .. ++ + ? no
 startled .. ++ + ? no
 defiant ++ + ? no
 engaged in thought ++ + ? no

pleased ++ + ? no
 tired ++ + ? no
 kindly ++ + ? no
 fearful ++ + ? no
 regretful .. ++ + ? no
 egotistic .. ++ + ? no
 overjoyed .. ++ + ? no
 vigorous .. ++ + ? no
 witty ++ + ? no
 rebellious .. ++ + ? no
 serious ++ + ? no
 warmhearted .. ++ + ? no
 insecure .. ++ + ? no
 self-centered ++ + ? no

APPENDIX D SAMPLE ADJUSTMENT SCORE

Name _____

If the statement is true of you, circle "True." If the statement is not true of you, circle "False."

- | | | |
|---|------|-------|
| 1. I am no one. Nothing seems to be me. | True | False |
| 2. I am optimistic. | True | False |
| 3. I am a hostile person | True | False |
| 4. Self-control is no problem to me. | True | False |
| 5. I tend to be on my guard with people who are somewhat more friendly than I had expected. | True | False |
| 6. I try not to think about my problems. | True | False |
| 7. I have an attractive personality. | True | False |
| 8. I am a rational person. | True | False |
| 9. I have a horror of failing in anything I want to accomplish. | True | False |
| 10. I put on a false front. | True | False |
| 11. I feel helpless. | True | False |
| 12. I am a good mixer. | True | False |
| 13. It is difficult to control my aggression. | True | False |
| 14. I feel insecure within myself. | True | False |
| 15. I really am disturbed. | True | False |
| 16. All you have to do is just insist with me, and I give in. | True | False |
| 17. I have to protect myself with excuses, with rationalizing. | True | False |
| 18. I have few values and standards of my own. | True | False |
| 19. I take a positive attitude toward myself | True | False |

20. I am ambitious.	True	False
21. I don't trust my emotions.	True	False
22. I have the feeling that I am just not facing facts.	True	False
23. I shrink from facing a crisis or difficulty.	True	False
24. I am assertive.	True	False
25. I am tolerant.	True	False
26. I have initiative.	True	False
27. I express my emotions freely.	True	False
28. I can accept most social values and standards.	True	False
29. I feel hopeless.	True	False
30. It is pretty tough to be me.	True	False
31. I am contented.	True	False
32. My decisions are not my own.	True	False
33. I am a failure.	True	False
34. I make strong demands on myself.	True	False
35. I despise myself.	True	False
36. I doubt my sexual power.	True	False
37. I am afraid of a full-fledged disagreement with a person.	True	False
38. I am self-reliant.	True	False
39. I am sexually attractive.	True	False
40. I am relaxed and nothing really bothers me.	True	False
41. I am likeable.	True	False
42. I am worthless.	True	False
43. I often kick myself for the things I do.	True	False
44. I am different from others.	True	False

45. I am poised.	True	False
46. I am shy.	True	False
47. I usually feel driven.	True	False
48. I can't seem to make up my mind one way or the other.	True	False
49. I feel emotionally mature.	True	False
50. I can usually live comfortably with people.	True	False
51. I understand myself.	True	False
52. I am afraid of sex.	True	False
53. I can usually make up my mind and stick to it.	True	False
54. I have a warm emotional relationship with others.	True	False
55. I usually like people.	True	False
56. I am satisfied with myself.	True	False
57. I often feel humiliated.	True	False
58. I have a feeling of hopelessness.	True	False
59. I am intelligent.	True	False
60. I dislike my own sexuality.	True	False
61. My hardest battles are with myself.	True	False
62. I am a hard worker.	True	False
63. I am disorganized.	True	False
64. I feel tired out.	True	False
65. I am responsible for my troubles.	True	False
66. I am unreliable.	True	False
67. I am a responsible person.	True	False
68. My personality is attractive to the opposite sex.	True	False
69. I want to give up trying to cope with the world.	True	False
70. I am confused.	True	False

- | | | |
|--|------|-------|
| 71. I feel adequate. | True | False |
| 72. I am liked by most people who know me. | True | False |
| 73. I just don't respect myself. | True | False |
| 74. I am impulsive. | True | False |

APPENDIX E

SAMPLE OF THE MODIFICATION OF THE EXPECTATION Q-SORT

Name _____

If you were to have a psychotherapist or counselor to talk with about your problems, what would you expect him to be like? If the statement is true concerning how you would expect the counselor or psychotherapist to be, put a circle around "true." If the statement is false concerning how you would expect this counselor or psychotherapist to be, put a circle around "false."

1.	Calm, easygoing	True	False
2.	Is careful not to let people waste his time.. ..	True	False
3.	Looks for the good points in people	True	False
4.	Likes to have a hand in managing other people's affairs	True	False
5.	Is concerned with what's right	True	False
6.	Blunt, straightforward, calls a spade a spade ..	True	False
7.	Hard to get to know.	True	False
8.	Is likely to give advice and guidance	True	False
9.	Cares what other people think of him	True	False
10.	Is likely to overestimate a person's abilities ..	True	False
11.	Is indulgent, forgiving.. .. .	True	False
12.	Is able to sense other people's feelings	True	False
13.	Is careful not to upset others	True	False
14.	Judges the behavior of others.	True	False
15.	Expects the individual to shoulder his own re- sponsibilities	True	False
16.	Is logical, sticks to the facts	True	False
17.	Is likely to keep his irritations or resentments to himself	True	False
18.	Is gentle, tender	True	False
19.	Self-satisfied.. .. .	True	False
20.	Never makes people feel uncomfortable	True	False
21.	Hard to deceive, does not accept things at face value	True	False
22.	Businesslike.	True	False
23.	Is conscientious about duties and responsibilities	True	False
24.	Likes to do a good job	True	False
25.	Is not emotional	True	False
26.	Reacts to most people in about the same way.. ..	True	False
27.	Sympathetic.. .. .	True	False
28.	Tries to discover who's to blame for mistakes made	True	False
29.	Is able to change his opinions easily	True	False
30.	Diplomatic	True	False
31.	Is troubled by the misfortunes of others	True	False
32.	Persuasive	True	False
33.	Well adjusted, gets along well in the world.. ..	True	False
34.	Is quick to give encouragement and reassurance ..	True	False
35.	Has no trouble getting along with people, makes friends easily	True	False
36.	Critical, not easily impressed	True	False

APPENDIX F

SAMPLE PERSONAL INFORMATION QUESTIONNAIRE

Name:

Ward:

Age:

Number of years of school:

Type of work before hospital:

Marital status:

Number of children:

Are you service connected: _____%

Number of times in a mental hospital:

How long have you been in the hospital this time?

If you had a chance to get psychotherapy or counseling would you want it:
very much?
a little?
not at all?

APPENDIX G

SAMPLE LETTER SENT TO ALL SUBJECTS WHO SPOKE
INTO THE TAPE RECORDER

November 13, 1964

NAME
Veterans Administration Hospital
Ward D
Gulfport, Mississippi

Dear Mr. _____:

Several weeks ago you were asked to take a series of tests and then talk about yourself into a tape recorder. We were studying a new way of having patients discuss their personal problems.

What you said into the tape recorder and your test performance has been reviewed. If you have any questions or wish to discuss any aspect of what you did, please contact me at the Biloxi Veterans Administration Hospital, 1D-21541, extension 283.

In case I do not see you personally, I would like to express my sincere appreciation for your assistance in this exploratory study. Without your cooperation, and the cooperation of the other patients who participated, we would have been unable to evaluate this new approach.

Sincerely yours,

Herbert Goldstein, MA.
Clinical Psychology Trainee

APPENDIX H

SUBJECT RAW DATA

(Note: In Column 2, 1 represents Experimental Group, Congruent Therapist, Positive Set; 2 represents Experimental Group, Incongruent Therapist, Positive Set; 3 represents Experimental Group, Congruent Therapist, Neutral Set; 4 represents Experimental Group, Incongruent Therapist, Neutral Set; 5 represents Control Group, Congruent Therapist, Positive Set; 6 represents Control Group, Incongruent Therapist, Positive Set; 7 represents Control Group, Congruent Therapist, Neutral Set; 8 represents Control Group, Incongruent Therapist, Neutral Set. Columns 7 through 20 represent changes in the dependent variables from pre- to posttreatment testing. A change score of 0 is represented by 09. Negative change scores are represented by increasing numbers and positive change scores are represented by decreasing numbers. That is, a change score of -1 is represented by 10, a change score of -2 is represented by 11, etc. A change score of +1 is represented by 08, a change score of +2 is represented by 07, etc. In Column 21, 01 represents little, or no speech during treatment, and 02 represents a moderate amount or constant speech during treatment. In Column 22, 01 represents the greatest stated desire for psychotherapy, 02 represents a moderate stated desire for psychotherapy and 03 represents a stated lack of desire for psychotherapy. In Column 23, 01 represents a nonpsychotic diagnosis and 02 represents a psychotic diagnosis.)

Subj No	Treat Group	I.Q.	Intro	Neuro	Age	AAFL	Adj Score	Aggr	Conc	Deact	So Aff	Anx	Depr	Egot	Pleas	Activ	Nonch	Skept	Start	Amt of Speech	Des Psycho	Diag
1	1	107	28	04	33	15	09	09	09	09	07	12	09	08	01	10	07	08	09	02	03	02
2	1	107	24	02	27	10	07	12	11	09	09	09	09	09	08	09	09	09	09	02	03	02
3	1	076	28	30	30	13	06	08	08	13	07	07	10	09	09	08	05	09	14	01	01	02
4	1	099	13	46	43	09	14	11	08	12	08	07	13	11	08	13	12	13	11	01	01	02
5	1	113	28	34	48	12	07	09	12	09	09	09	09	10	09	09	06	09	09	01	02	01
6	1	088	20	48	41	16	10	11	06	11	04	10	12	15	06	10	11	11	09	01	01	01
7	1	099	36	32	26	13	09	10	08	10	06	13	11	08	07	07	08	10	09	01	02	02
8	1	121	29	36	38	11	09	10	09	09	09	08	08	09	09	11	10	07	09	01	01	01
9	1	093	12	40	48	20	11	10	09	10	02	17	09	08	03	08	10	10	10	01	01	01
10	1	102	29	25	51	12	09	12	09	12	07	10	11	11	10	08	12	07	08	01	01	02
11	1	088	28	30	37	11	07	12	05	06	08	10	14	08	07	08	10	06	09	02	03	02
12	1	078	34	08	18	15	06	12	12	12	12	14	09	09	02	06	06	11	09	02	01	02
13	2	089	24	12	37	04	05	05	06	10	05	07	08	06	09	06	09	06	06	02	02	02
14	2	099	14	40	43	12	13	11	09	09	07	10	11	09	03	10	11	14	09	01	01	01
15	2	088	36	26	29	06	18	09	08	12	13	08	09	06	09	09	11	09	09	02	01	01
16	2	119	18	44	40	12	08	12	09	11	07	12	09	09	08	09	09	09	09	02	02	01
17	2	102	24	22	22	12	06	09	12	05	11	16	16	10	10	12	07	14	09	01	02	02
18	2	099	14	06	32	09	09	09	08	07	11	07	12	11	12	09	09	07	09	01	02	02
19	2	106	10	44	45	05	13	06	09	06	09	09	09	12	09	15	12	09	09	02	03	01
20	2	109	22	30	43	05	04	05	07	07	06	08	08	06	06	07	07	08	08	02	02	02
21	2	103	12	38	43	06	09	08	12	09	12	05	10	11	11	09	09	11	09	02	01	02

Subj No	Treat Group	I.Q.	Intro	Neuro	Age	AACL	Adj Score	Aggr	Conc	Deact	So Aff	Anx	Depr	Egot	Pleas	Activ	Nonch	Skept	Start	Amt of Speech	Des Psycho	Diag
22	2	095	26	24	22	08	10	14	13	11	18	09	09	10	09	08	09	06	07	01	02	02
23	2	112	18	18	40	09	07	07	08	10	09	10	11	16	07	09	06	09	10	01	01	02
24	2	089	18	48	44	00	15	10	12	09	15	05	06	16	15	09	15	09	06	01	01	01
25	3	098	30	42	46	13	09	12	09	13	06	12	12	07	07	07	07	11	09	02	02	02
26	3	104	40	10	45	10	10	08	09	09	10	09	09	08	16	09	09	09	09	01	01	02
27	3	077	18	36	45	07	07	09	09	09	13	09	09	07	08	12	09	10	09	02	02	02
28	3	090	21	20	45	09	09	09	09	09	09	09	09	09	12	09	12	09	09	01	01	02
29	3	104	15	28	35	13	11	06	09	09	03	09	13	10	07	09	09	10	09	01	03	02
30	3	109	13	38	41	07	10	09	09	09	06	09	09	09	11	09	09	09	09	01	01	01
31	3	124	19	42	58	10	11	08	09	08	08	11	10	08	06	07	09	09	08	01	01	01
32	3	093	24	12	41	12	09	09	09	14	08	11	11	11	11	12	09	09	09	02	02	02
33	3	111	30	38	48	13	07	09	09	12	09	11	09	09	05	12	09	06	09	01	03	01
34	3	077	18	38	31	19	08	10	07	09	06	13	10	07	06	07	08	08	10	01	01	02
35	3	093	14	42	41	14	06	13	09	09	11	10	11	07	10	09	10	10	08	01	01	01
36	3	108	11	44	20	14	16	09	09	11	09	12	07	10	09	09	10	13	09	01	02	01
37	4	102	26	11	40	12	10	06	12	09	09	12	09	09	09	12	06	09	09	01	02	02
38	4	098	19	34	45	11	09	11	09	10	07	09	12	09	06	09	10	10	09	01	02	02
39	4	093	14	08	37	05	03	04	15	08	14	12	11	09	12	09	10	12	07	02	02	02
40	4	097	12	28	35	12	05	11	06	09	09	06	12	09	06	09	09	09	06	01	03	01
41	4	108	23	13	40	11	07	11	10	09	07	09	09	09	09	10	09	09	09	02	02	01
42	4	101	38	34	40	08	11	09	10	09	08	11	08	10	10	09	10	09	09	02	01	02
43	4	106	40	00	30	10	05	09	09	09	06	11	09	09	11	09	08	09	09	02	03	02
44	4	087	10	43	42	10	10	03	11	07	12	06	07	09	09	09	07	07	07	01	01	01

Subj No	Treat Group	I.Q.	Intro	Neuro	Age	AACL	Adj Score	Aggr	Conc	Deact	So Aff	Anx	Depr	Egot	Pleas	Activ	Nonch	Skept	Start	Amt of Speech	Des Psycho	Diag
45	4	088	24	26	43	09	10	09	10	07	09	09	11	10	10	09	08	08	08	02	01	01
46	4	102	26	30	24	10	08	10	10	09	06	10	07	09	11	09	12	10	09	02	02	02
47	4	116	17	32	49	09	12	07	10	10	08	11	10	05	09	09	08	07	10	02	02	01
48	4	111	14	16	36	09	12	09	10	10	09	10	13	09	10	11	11	12	09	01	03	02
49	5	108	26	42	30	06	03	11	11	09	08	09	07	07	10	09	10	09	09			
50	5	092	10	44	44	09	09	09	09	09	08	09	08	09	10	09	12	12	11			
51	5	107	29	25	55	06	10	10	10	17	10	06	09	11	11	07	13	13	09			
52	5	079	28	36	42	12	08	09	08	11	09	07	11	09	10	08	09	09	11			
53	5	086	36	10	44	09	09	08	11	05	14	11	09	08	06	12	09	10	09			
54	5	083	23	35	37	10	10	08	07	07	11	09	06	16	09	08	07	10	10			
55	5	118	22	35	31	12	06	07	09	10	11	09	12	11	08	09	09	09	09			
56	5	119	30	24	31	08	10	11	17	09	09	02	09	09	10	09	11	04	09			
57	5	101	25	17	29	10	01	07	10	11	09	10	09	09	03	09	09	09	09			
58	5	129	13	48	39	07	09	06	07	09	09	09	10	09	02	13	09	10	10			
59	5	098	28	11	43	11	04	06	12	04	14	08	09	07	07	12	07	09	08			
60	5	092	18	42	28	15	03	04	09	06	03	12	08	02	09	09	09	09	10			
61	6	093	22	46	43	10	00	10	09	09	13	07	11	10	09	09	09	09	09			
62	6	091	26	32	44	05	09	07	11	09	13	07	13	09	14	10	09	10	10			
63	6	098	20	35	34	07	00	09	09	08	07	12	09	10	10	11	09	09	09			
64	6	102	26	38	41	13	00	09	11	14	07	14	11	06	08	07	10	09	08			
65	6	073	26	18	40	09	09	06	08	09	09	09	09	09	08	09	07	09	09			
66	6	081	12	42	41	08	05	14	10	08	05	06	09	08	09	09	14	10	08			
67	6	087	28	10	32	10	04	11	11	09	11	09	09	07	11	10	08	09	06			

Subj No	Treat Group	I.Q.	Intro	Neuro	Age	AACL	Adj Score	Aggr.	Conc	Deact	So Aff	Anx	Depr	Egot	Pleas	Activ	Nonch	Skept	Start	Amt of Speech	Des Psycho	Diag
68	6	100	22	39	35	12	16	10	13	08	08	10	13	08	06	09	06	07	09			
69	6	098	18	18	47	08	11	09	09	09	09	10	09	09	05	08	11	09	09			
70	6	087	32	06	37	07	12	09	08	06	09	05	06	07	08	03	09	09	09			
71	6	103	18	22	44	09	11	09	10	08	10	08	09	09	08	09	09	08	08			
72	6	117	28	40	30	10	05	09	10	05	09	11	09	09	10	11	11	09	09			
73	7	097	10	44	45	12	06	12	08	09	09	08	10	08	06	11	12	10	09			
74	7	100	13	22	38	10	07	10	11	15	10	07	11	09	11	09	06	10	09			
75	7	109	29	15	35	04	09	08	09	09	10	09	07	09	11	11	13	08	09			
76	7	081	21	16	38	09	10	09	10	10	10	12	11	09	10	11	13	11	06			
77	7	108	36	02	38	09	10	12	09	09	09	09	09	09	06	09	09	09	09			
78	7	093	24	48	44	10	04	08	08	10	10	08	13	09	10	06	11	10	09			
79	7	116	19	42	43	10	10	09	09	08	09	07	06	09	12	09	11	09	09			
80	7	090	32	26	43	10	12	07	08	12	10	10	06	07	09	09	11	06	09			
81	7	103	17	42	40	11	08	09	11	11	09	11	17	09	09	09	09	10	09			
82	7	076	34	08	42	09	10	09	10	08	09	10	08	10	07	08	07	08	10			
83	7	103	11	43	35	09	12	09	09	09	11	09	10	09	11	09	10	09	09			
84	7	086	14	42	41	07	06	06	06	07	12	06	10	06	11	11	08	10	09			
85	8	086	16	08	32	08	01	08	09	05	09	09	09	10	09	04	09	07	09			
86	8	110	24	06	37	05	13	09	09	09	09	07	09	09	12	12	09	09	09			
87	8	080	27	06	44	11	12	12	11	11	12	12	09	06	13	10	04	13	11			
88	8	095	27	22	41	09	06	09	10	09	11	09	09	09	11	11	09	09	09			
89	8	105	24	48	40	08	13	09	09	09	15	09	10	12	13	12	09	09	06			
90	8	089	23	42	41	04	08	09	14	03	06	00	06	06	03	06	09	04	06			

Subj No	Treat Group	I.Q.	Intro	Neuro	Age	AACL	Adj Score	Aggr	Conc	Deact	So Aff	Anx	Depr	Egot	Pleas	Activ	Nonch	Skept	Start	Amt of Speech	Des Psycho	Diag
91	8	089	23	02	44	10	10	07	07	09	07	09	09	09	09	07	09	09	09			
92	8	124	28	44	41	10	04	07	09	06	09	07	08	09	10	10	09	11	09			
93	8	115	18	19	53	08	07	09	09	09	09	09	09	09	11	07	07	09	09			
94	8	095	23	22	46	11	10	09	06	11	11	11	11	13	13	07	09	10	05			
95	8	101	23	28	31	10	09	07	11	08	09	08	12	10	10	09	09	10	09			
96	8	089	24	24	32	09	15	09	09	09	15	06	09	09	12	09	09	03	09			

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This dissertation was prepared under the direction of the chairman of the candidate's supervisory committee and has been approved by all members of that committee. It was submitted to the Dean of the College of Arts and Sciences and to the Graduate Council, and was approved as partial fulfillment of the requirements for the degree of Doctor of Philosophy.

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